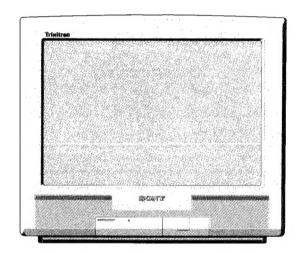
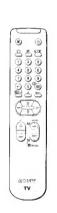
SERVICE MANUAL

BE-5 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-21R1A	RM-836	Italian	SCC-K31A-A				
KV-21R1D	RM-836	AEP	SCC-K32A-A				
KV-21R1E	RM-836	Spanish	SCC-K30A-A				









ITEM MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H	VHF: E2-E12 UHF: E21-E69 Hyper: S1-S41	PAL NTSC3.58/4.43 (video input only)
AEP	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: S1-S20 Hyper: S1-S41 D/K VHF: R1-R20 UHF: R21-R69	PAL, SECAM NTSC3.58/4.43 (video input only)
Spanish	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Hyper: S1-S41 D/K VHF: R1-R20 UHF: R21-R69	PAL, SECAM NTSC3.58/4.43 (video input only)

MODEL	21R1A	21R1D	21R1E
Power Consumption	75W	75W	75 W

SPECIFICATIONS

Picture Tube

Hi-Black Trinitron

Approx. 55 cm (21 inches) (Approx. 51 cm picture measured diagonally) 100° deflection

Rear/Front Terminals

[REAR]

21-pin Euro connector (CENELEC standard)

- Including audio/video input, RGB input

[FRONT]

2 Video input - phono jack
Audio inputs - phono jacks

Headphone jack - stereo minijack

Sound output

14Wx2 (music power)

7Wx2 (RMS)

Dimensions

517x472x489 mm approx.

Weight

Approx. 21.0 kg

Supplied accessories

RM-836 Remote Commander (1)

IEC designated batteries (2)

Other features

TELETEXT, Fasttext

TOP text (KV-21R1A and 21R1D only)

NICAM (KV-21R1E only)

[RM-836]

Remote control system

Infrared control

Power requirements Dimensions 3V dc (2 batteries) R6 (size AA)

Weight

Approx. 210x45x24 mm (w/h/d)

ight Approx. 90g

(Not including battery)

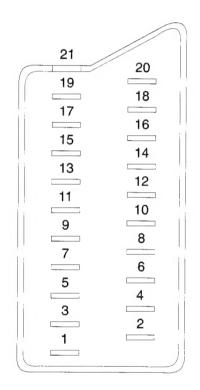
Design and specifications are subject to change without

notice.

Model name	KV-21R1A	KV-21R1D	KV-21R1E
PIP	OFF	OFF	OFF
MPIP	OFF	OFF	OFF
Rotation Coil	ON	ON	ON
VM Set	ON	ON	ON
Scart 1	ON	ON	ON
Scart 2	OFF	OFF	OFF
Front in (3)	ON	ON	ON
AKB in 16:9 mode	ON	ON	ON
TXT	ON	ON	ON
FLOF	ON	ON	ON
TOP	ON	ON	ON
Norm B/G/H	ON	ON	ON
Norm I	OFF	OFF	OFF
Norm D/K	OFF	ON	ON
Norm L	OFF	OFF	OFF
Language Preset	Italian	German	Spanish

21 pin connector (- 1)





Pin No.	1	2	4	Signal	Signal Level
1	0	0	0	Audio output B (Right)	Standard level : 0.5V rms Output impedance : Less than 1k ohms*
2	0	0	0	Audio input B Standard level : 0.5V rms (Right) Output impedance : More than 10k ohm	
3	0	0	0	Audio output A (Left)	Standard level : 0.5V rms Output impedance : Less than 1k ohm*
4	0	0	0	Ground (Audio)	
5	0	0	0	Ground (Blue)	
6	0	0	0	Audio input A (Left)	Standard level : 0.5V rms Output impedance : Less than 10k ohm*
7	0	•	•	Blue input	$0.7 \pm 3 \text{dB}$, 75 ohms, positive
8	0	0	0	Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More10k ohms Input capacitance : Less than 2nF
9	0	0	0	Ground (Green)	
10	0	0	0	Open	
11	0	•	•	Green	
12	0	0	0	Open	
13	0	0	0	Ground (Red)	
14	0	0	0	Ground (Blanking)	
4.5	0	-	-	Red input	0.7 ± 3dB, 75 ohms, positive
15	-	0	0	(S signal) croma input	$0.7 \pm 3 \text{dB}, 75 \text{ ohms, positive}$
16	0	•	•	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75 ohms
17	0	0	0	Ground (Video output)	
18	0	0	0	Ground (Video input)	
19	0	0	0	Video output	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
20	0	-	_	Video input	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
20	-	0	0	Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
21	0	0	0	Common ground (plug, sheild)	

○ Connected ● Not Connected (Open) * at 20Hz - 20kHz

	0			<u> </u>	PR	DGR	Ţ	Φ	R	0	
MONO	0	t) MEI	_	+	_	+					

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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

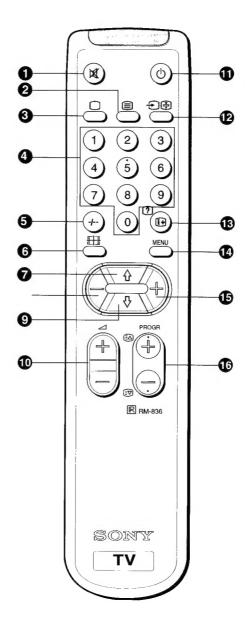
WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.

THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK \(\hat{\Lambda}\) ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.



Getting Started

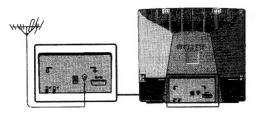
Please open the flaps at the front and at the back of the Instruction Manual for illustrations of the TV set and the Remote Commander. Letters in boxes refer to the buttons on the TV set, numbers in circles to the buttons on the Remote Commander.

Note: The illustrations in this instruction manual are based on the KV-25R1D model. You may find differences between these illustrations and your actual model.

Step 1

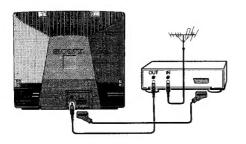
Connecting the Aerial

(If you connect a VCR, skip to step 2). Connect an external aerial to the socket) J.



Step 2

Connecting a VCR



We recommend that you tune in the VCR signal to programme number "0". For details see "Presetting Channels Manually" on page 33.

Step 3

Connecting the Mains Plug

Connect the mains plug of the TV set to the electrical outlet (220-240 V AC, $50~{\rm Hz}$).

Step 4

Inserting the Batteries into the Remote Commander



Always remember to dispose of used batteries in an environmental friendly way.

Step 5

Step 6

Presetting Channels Automatically

TV searches for all available channels. If manual tuning is preferred see Menu option - Presetting Channels Manually.



- Depress power switch ① A on TV set.
- Press and hold **D** on TV set for 2 seconds. Auto tuning starts and screen shows.
- When Auto tuning stops, the programme position 1 is displayed.
- Programme names are automatically taken from Teletext if available. With that function, you can easily identify which channel you are watching.

œ

TV Operation

This section explains functions used whilst watching TV. Most operations are carried out using the Remote Commander (numbers in circles). All basic functions are also available on the TV set (letters in boxes).

То	Press		
Switch on	• ① A on TV		
Switch off temporarily	• \circlearrowleft $\textcircled{1}$ TV is now in standby mode, \circlearrowleft indicator \textcircled{B} on TV lights.		
Switch on again	• 🔾 3, PROGR +/- 10 🕻 or any number button 4		
Switch off completely	 ① A on TV To save energy we recommend switching off completely when TV is not in use. 		
Select programmes	• PROGR +/- 19 C or number buttons 4 For double digit numbers press -/ 5 then the number e.g. For 23, press -/ 5 then 2 and 3.		
Display the programme number	 • • •		
Adjust the volume	• - -+/- 9 D		
Mute the sound	• of • • of • • of • of • of • of • of		
View video input	• 🗗 🛈 🖪 Press again to return to TV programme.		
View programmes in 16:9 mode	• ## 6 Press again to return to 4:3 mode.		

MENU Operation

Use the following buttons on Remote Commander to control Menu screen.

1 Press MENU 10 to switch the Menu Screen on/off.



2 Use the coloured buttons as follows:



Red – **8** decrease/select



Yellow + 10 increase / confirm(OK)

Blue **6** Scroll down

Adjusting the Picture and Sound

1 Press MENU (3).



Press green of or blue to select (Picture) or ↑ (Sound) and press yellow (OK) to confirm.



3 Press green **7** or blue **19** to select the item you wish to change.

PICTURE CONTROL

Symbol	Item	- E	ffect +
•	• Picture	Less	More
3	 Colour 	Less	More
Ø.	 Brightness 	Darker	Brighter
(Sharpness 	Softer	Sharper
Z'Z	Hue control (only for NTSC)	Reddish video signals)	Greenish



SOUND CONTROL

Symbol	Item	- Effect	+
	• MONO/STEREO	A: channel 1	B: channel 2
		Stereo/Mono	
4	 Treble 	Less	More
2:	• Bass	Less	More
	 Balance 	More left	More Right
C	 Headphones: 		
	Volume	Less	More
	MONO/STEREO	A: channel 1	B: channel 2

Stereo/Mono



- 4 Press red 3 or yellow 4 to change levels.
- **5** Press MENU **1** to return to normal TV screen.
- To reset to factory preset picture levels, press green ⑦ or blue ⑤ to select → ← and press yellow (OK) ⑥.
- To return to the Main menu, select → and press yellow.
- When receiving a STEREO or Bilingual programme:
- 1. Stereo/Monoaural: on the screen appears Do or Do.
- 2. Bilingual: on the screen appears DA♥ or DB♥.

Using the Sleep Timer

The TV may be set to switch to the standby mode automatically after a length of time chosen by you. You may set the time in 30 minutes steps up to 4 hours.



- 1 Press MENU (3).
- 2 Press green 7 or blue 6 to select 🖰
- **3** Press red **3** or yellow **10** to set time delay. 0.00 (OFF) 0.30 1.00 1.30 4.00
- 4 Press MENU 3 to return to normal TV screen.
 When watching TV, press 1 to display time remaining.

Presetting Channels Manually

Up to 60 programme positions are available for presetting channels.

- 1 Press MENU ®.
- 2 Press green **②** or blue **③** to select **⇒** and press yellow (OK) **⑥**.

3 Select programme number using PROGR +/- 10 C or the number buttons 4.

Control of the Contro

- 4 Press green or blue to select tuning bar (IIIII...) and press red or yellow to start channel search. When a channel is found the tuning bar stops moving and you see the picture.
- 5 If you want to store, press green of or blue to to select ♦ and press yellow (OK) to If you don't want to store, press red to or yellow to continue search.
- **6** Repeat steps 3 to 5 for all other channels.
- **7** Press MENU **6** to return to normal TV screen.

Skipping Programme Positions

You can skip unused programme positions when selecting channels with the PROGR +/- 10 to buttons. You can still select them, however, using the number buttons 1.

- 1 Press MENU 13.
- 2 Press green **⑤** or blue **⑥** to select **⋄** and press yellow **⑥**.



- 4 Press green 7 or blue 6 to select Coo and press yellow (OK) 6.
- **5** Press green **7** or blue **6** to select ♦ and press yellow (OK) **6** to store.
- **6** Repeat steps 3 to 5 for other unused programme positions.
- **7** Press MENU **13** to return to normal TV screen.

Fine-Tuning Channels

You can fine tune a stored channel.

- 1 Select the channel you wish to fine tune.
- 2 Press MENU 13.
- **3** Press green **7** or blue **6** button to select ⇒ and press yellow (OK) **6**.

4 Press green ⑦ or blue ⑤ to select ←F → and use red ⑧ or yellow ⑥ to adjust tuning.

PS CST DI

- **5** Press green **②** or blue **⑤** to select ◇ and press yellow (OK) **⑥** to store.
- 6 Press MENU 13 to return to normal TV screen.

Exchanging Programme Positions

After tuning you may wish to rearrange the programme positions.

- 1 Press MENU 13.
- Press green ⑦ or blue ⑤ button to select ❖ and press yellow (OK) ⑥.



Press green or blue to select PROGR and press yellow (OK)



4 Press red 8 or yellow 10 to select the first programme position.



- **5** Press the blue **19** button.
- **6** Press red **3** or yellow **1** to select the second programme position.
- 7 Press blue 15 to select 15 and press yellow (OK) 16 to exchange.
- **8** Repeat steps 4 to 7 for other programme positions.
- **9** Press MENU **13** to return to normal TV screen.

Teletext Operation

Viewing Teletext

Teletext is an information service broadcast by TV stations.

- 1 Select the channel which carries the teletext service you wish to receive.
- **2** Press **2** to switch on teletext.
- 3 Input three digits for the page number using the programme number buttons 4 or 1/1 ♠ (next or previous page).
- 4 Press 3 to switch off teletext.

Teletext errors may occur if the broadcasting signals are weak.

Using Other Teletext Functions

Superimposing teletext on the TV

Press (2) again to cancel superimposing.



Freezing a teletext subpage

Press (HOLD) to freeze the subpage. Freezing the page prevents the information that is displayed from being updated.

Press (to cancel HOLD and allow update to continue.

Revealing concealed information (eg: answers to a quiz).

Press ② ② to reveal information.

Press again to conceal the information.

Using colour buttons to access pages (Fastext)

When the colour coded menu appears at the bottom of a page, press the colour button (green, red, yellow or blue) **736** to access the corresponding page.

Connecting Optional Equipment

There is a wide range of optional equipment you can connect to your TV. Refer to the illustrations on the back flap page of this manual.

Symbol

Acceptable input signals

-Ð/-Ð2 **H** 🗓

 Normal audio/video through the phono jacks.

⊕/→ÖK

• Normal audio/video and RGB through Euro AV connector.

Selecting the Input

Press to return to normal TV operation.

Connecting Headphones

Plug in the headphones to the Ω \square socket on the front of the TV set.

Troubleshooting

Here are some simple solutions to the problems which affect the picture and sound.

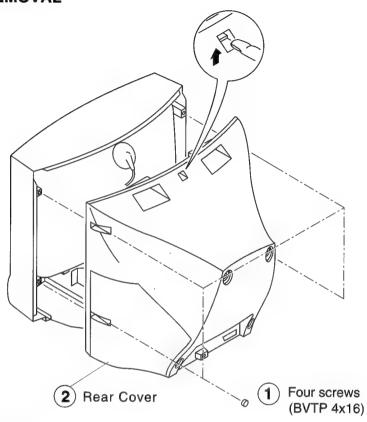
Problem	Solution
No picture, screen is dark, no sound	 Plug the TV in. Press ⊕ A on the TV. If ⊕ indicator B is on press ⊕ 3 or the programme number 4 on the remote commander. Check the aerial connection. Check that the video source is on. Turn the TV off for 3 or 4 seconds and then turn it on again using ⊕ A.
Poor or no picture (screen is dark, sound is good)	Press MENU and adjust brightness picture and colour balance level.
Picture moved to the left when watching RGB video source.	• Press ⊕ 11 repeatedly to select ⊸.
Good picture, no sound	 Adjust the volume ∠ +/- ⑤ D. Disconnect any headphones. If ⋘ is displayed on the screen, press ⋘ ⑥.
No colour on colour programmes	 Press MENU 13 and adjust colour balance. Press MENU 13 and reset to factory settings.
Distorted picture when changing programmes or selecting teletext	• Turn off the equipment connected to the 21-pin connector K .
Remote commander does not function	Replace the batteries.

If you continue to have these problems, have your TV serviced by qualified personnel.

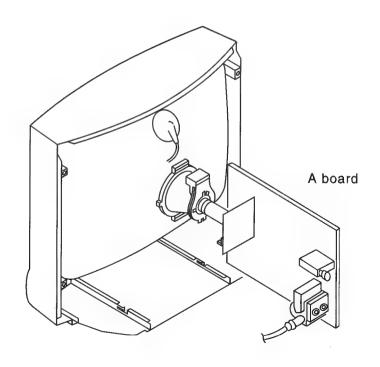
[•] NEVER open the casing yourself.

SECTION 2 DISASSEMBLY

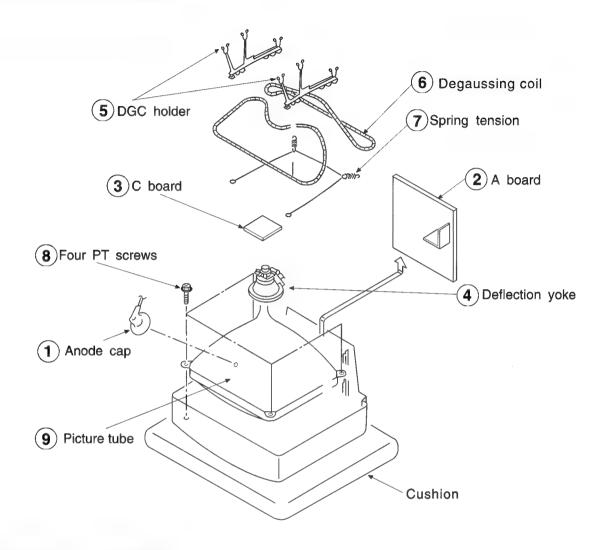
2-1. REAR COVER REMOVAL



2-2. SERVICE POSITION



2-3. PICTURE TUBE REMOVAL



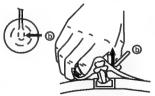
REMOVAL OF ANODE-CAP

Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

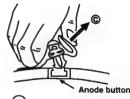
* REMOVING PROCEDURES.



1 Turn up one side of the rubber cap in the direction indicated by the arrow a



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ



When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ©

HOW TO HANDLE AN ANODE-CAP

- 1 Don't damage the surface of anode-cap with sharp shaped material!
- 2 Don't press the rubber hardly not to hurt inside of anode-caps!

 A metal fitting called as shatter-hook terminal is built into the rubber.
- 3 Don't turn the foot of rubber over hardly!
 The shatter-hook terminal will stick out or damage the rubber.





SECTION 3 SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with the rated power supply voltage, unless otherwise noted.

The Contrast and Brightness controls should be set as follows unless otherwise noted:

Perform the adjustments in the following order:

- 1. Beam Landing
- 2. Convergence
- 3. Screen (G2), Drive, White Balance, Sub Colour and Sub Brightness.
- 4. Focus

Note: Test Equipment Required.

- 1. Colour bar/Pattern Generator
- 2. Degausser
- 3. DC Power Supply
- 4. Digital multimeter
- 5. Oscilloscope

Preparation:

- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

3-1. BEAM LANDING

Demagnetize with a degausser.

- Input an all white raster signal from the pattern generator.
 CONTRAST BRIGHTNESS normal
- 2. Switch the raster signal of the pattern generator to Red.
- 3. Move the deflection yoke backward, and adjust with the purity control so that Red is at the centre and the Blue and Green are evenly spaced at the sides. see (Fig. 3-1 3-3)
- 4. Move the deflection yoke forward, and adjust so that the entire screen becomes Red. (Fig. 3-1)
- 5. Switch the raster signal to Blue and then Green to confirm the condition.
- 6. When the position of the deflection yoke has been determined, tighten it with the deflection yoke mounting screw
- 7. When the landing at the corners is not correct, adjust by using disk magnets. (Fig. 3-4)

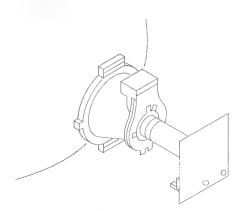


Fig. 3-1

Fig. 3-2

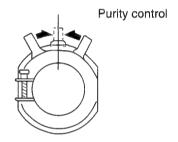


Fig. 3-3

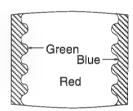
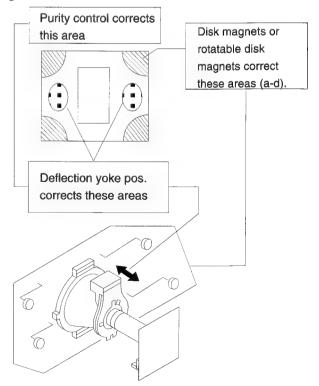


Fig. 3-4

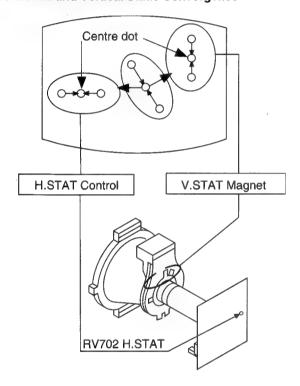


3-2. CONVERGENCE

Preparation:

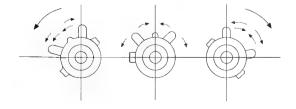
- Before starting, perform FOCUS, H.SIZE, and V.SIZE adjustments.
- Set the BRIGHTNESS control to minimum.
- Input a dot pattern from the pattern generator.

(1) Horizontal and Vertical Static Convergence

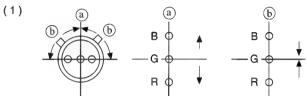


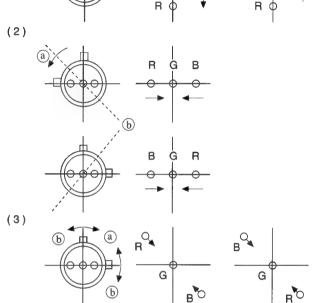
- 1. Adjust the H.STAT control to converge the Red, Green and Blue dots at the centre of the screen. (Horizontal movement)
- 2. Adjust the V.STAT magnet to converge the Red, Green and Blue dots at the centre of the screen. (Vertical movement)
- If the horizontal dots cannot coincide with variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking.

(Adjust the convergence by tilting the V.STAT convergence or by opening or closing the V.STAT convergence.)



3. When the V.STAT magnet is moved in the direction of the a and b arrows, the Red, Green and Blue dots move as shown below.

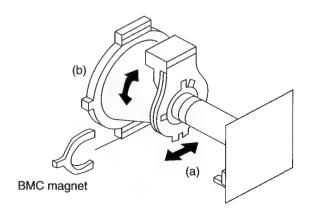




If the Red and Blue dots do not converge with the Green dots, perform the following steps.

- 1. Move the BMC magnet (a) to correct for insufficient H.static convergence.
- 2. Rotate the BMC magnet (b) to correct for insufficient V.static convergence.

In either case, repeat the Beam Landing Adjustment.

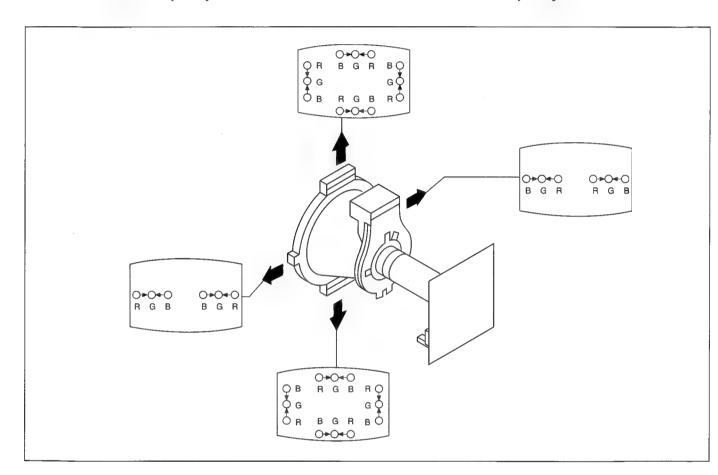


(2) Dynamic Convergence Adjustment

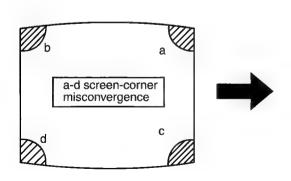
Preparation:

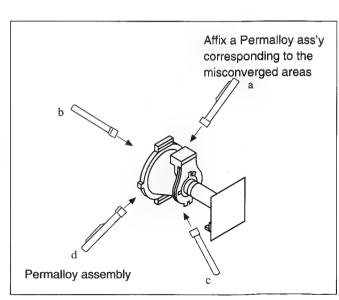
- Before starting, perform the Horizontal and Vertical static convergence adjustment.
- 1. Slightly loosen the deflection yoke screw.
- 2. Remove the deflection yoke spacers.

- 3. Move the deflection yoke for best convergence as shown below.
- 4. Tighten the deflection yoke screw.
- 5. Install the deflection yoke spacers.

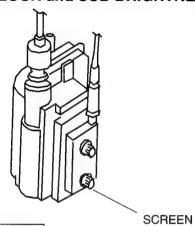


(3) Screen-corner Convergence.





3-3. SCREEN(G2), DRIVE, WHITE BALANCE, SUB COLOUR and SUB BRIGHTNESS.

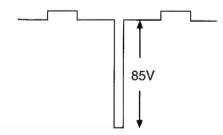


Screen (G2) setting

- 1. Input a 0 IRE (Black Level) signal from the pattern generator.
- 2. Enter into the Service Mode "Test" Test" and 38.
- 3. Adjust the SCREEN VR until the Down arrow is displayed.
- 4. Adjust the SCREEN VR until the Down arrow just disappears.
- 5. Press the TV Button on the Remote Commander to store the data.

Drive Level

- 1. Input a Video signal containing a small area of 100% white on a black background.
- 2. Connect an oscilloscope to Pin 10 of J701 (R OUT) on the C Board.
- 3. Set the Picture to maximum using "Test" Test" and 01.
- 4. Enter into the Service mode (Adjust Menu).
- Using the Blue and Green buttons select "RED HWB".
- 6. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform has an amplitude of 85V.

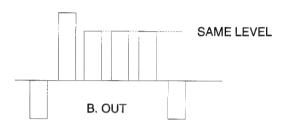


White Balance Adjustment

- 1. Input an all white pattern from the pattern generator.
- Adjust the Colour and Brightness controls to the standard level
- 3. Enter into the Service Mode.
- 4. Adjust the Green HWB and Blue HWB so that the White Balance becomes optimum.

Sub Colour Adjustment

- 1. Input a PAL colour bar pattern from the pattern generator.
- 2. Connect an oscilloscope to Pin (8) of J701 (B OUT) on the C Board.
- 3. Enter into the Service Mode "Test" "Test" and 22.
- 4. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform becomes as follows:



Note: If the TV is able to receive PAL and SECAM transmissions, repeat the above procedure using a Secam colour bar signal.

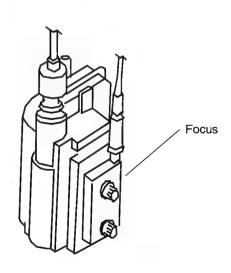
Sub Brightness Adjustment

- 1. Input a Philips pattern from the pattern generator.
- 2. Enter into the Service Mode "Test" "Test" and 23.
- 3. Using the Red and Yellow buttons on the Remote Commander adjust until the 0 IRE of the grey scale and the cut off are only slightly visible on the screen.

3-4. FOCUS

- 1. Receive a television broadcast.
- 2. Normalize the picture setting.
- Adjust the focus control on the flyback transformer to focus the screen centre area properly.
 Bring only the centre area of the screen into focus, the

magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



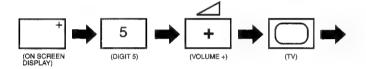
SECTION 4 CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied Remote Control Commander RM-836.

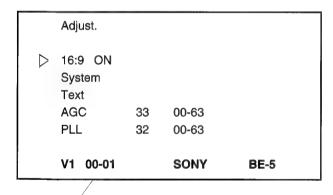
HOW TO ENTER INTO SERVICE MODE

- 1. Turn on the main power of the set and enter into stand-by mode.
- Press the following sequence of buttons on the Remote Control Commander.



"TT-- " will appear in the top right corner of the screen Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.



Software version

- 4. Press the Blue (Next) or Green (previous) buttons to select the adjustment item from the table.
- 5. Press the Yellow (+) or Red (-) buttons to change the data as required.
- Turn off the power to quit the service mode when adjustments are completed.

Range of adjustments available from the on screen menu system.

Adjustment	Set	Range
V size	21	0 - 63
V breth	32	0 - 63
Pin amp	12	0 - 63
Para. tilt	43	0 - 63
V linear	42	0 - 63
Corner corr	05	0 - 63
H size	34	0 - 63
V pos	00	0 - 63
H phase	42	0 - 63
Blue	26	0 - 63
Green	32	0 - 63
Red	42	0 - 63
HV blk 1	00	0 - 63
HV blk 2	00	0 - 63
V cent	06	0 - 63
Zwei max	36	0 - 63
zwei min	18	0 - 63

4-2. TEST MODE 2:

TT -- Mode is available by pressing the Test button twice, O.S.D 'TT --' appears. The functions described below are available by pressing two digits. To release the 'TT --' mode, press 0 twice, press 'TEST', press 'TV' or switch the TV into Stand-by mode.

00	Switch 'TT' Mode off.		
01	Set picture level to maximum.		
02	Set picture level to minimum.		
03 .	Set volume to 35%.		
04	Set volume to 50%.		
05	Set volume to 65%.		
06	Set volume to 80%.		
07	Ageing condition (picture max., brightness max.).		
08	Shipping condition (Analog values are RESET to factory setting, Prog 1 is selected, TT—mode switched off, Vol = 35%).		
09	Dummy.		
10	No function.		
11	Dummy		
12	Dummy.		
13	Dummy.		
14	Dummy.		
15	Read factory setting from ROM to NVM - Reads Volume, Brightness, Picture, Hue, Sharpness and Colour values from ROM to the actual used values (Last Power Memory).		
16	Save actual used values as reset values.		
17	Enable / Disable Sharpness Operation.		
18	Dummy.		
19	RGB priority.		
20	No function.		
21	No function.		
22	Sub Colour (Pal / Secam Different Stores)		
23	Sub Brightness.		
24	RGB priority on.		

25	Destination Systems DKE.
26	Destination Systems I/U.
27	Destination System I/I'.
28	Destination BG only.
29	Dummy.
30-31	No function.
32	Picture level to 50%
33-35	No function.
36	Audio mute ON.
37	OSD off.
38	Enter G2 adjustment mode.
39	Sub-brightness
40	No function.
41	Re-initialise NVM.
42	Dummy.
43	Re-initialise Geometry settings.
44-47	Dummy
48	Set NVM testbyte to 44h in NVM.
49	Erase NVM testbyte
50	No function.
51	Toggle 60/100 programs.

Note: For Test Modes 41 - 51, it is necessary to ensure that the TV is set to Prog 59.

DEFLECTION SYSTEM ADJUSTMENT

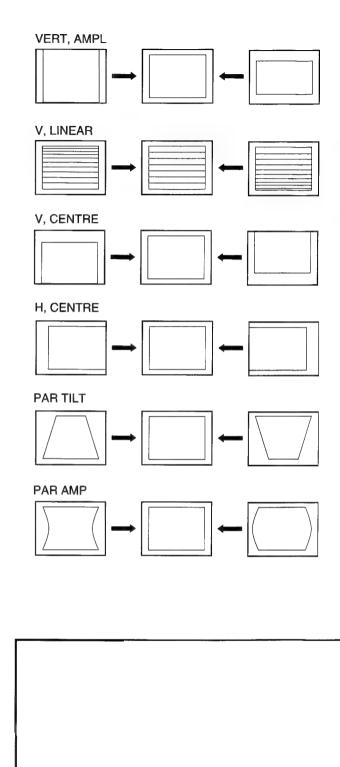
- 1. Enter into the service mode.
- 2. Using the Blue or Green buttons select the Adjust item.
- 3. Press the Yellow button to enter the adjustment submenu.
- 4. Select and adjust each item in order to obtain the optimum image.

See Note on page 23

Adjustment	Set	Range
V size	21	0 - 63
V breth	32	0 - 63
Pin amp	12	0 - 63
Para. tilt	43	0 - 63
V linear	42	0 - 63
Corner corr	05	0 - 63
H size	34	0 - 63
V pos	00	0 - 63
H phase	42	0 - 63
Blue	26	0 - 63
Green	32	0 - 63
Red	42	0 - 63
HV blk 1	00	0 - 63
HV blk 2	00	0 - 63
V cent	06	0 - 63
Zwei max	36	0 - 63
zwei min	18	0 - 63

AGC ADJUSTMENT

- 1. Receive a signal of 63dBuV / 75 ohm terminated via the tuner socket.
- 2. Measure the voltage at AGC TP.
- 3. Adjust TU101 RV to obtain a voltage of 3.0 ± 0.3 V.



- A Board Component Side -

AGC TP

TU101

4-3. BE-5 SELF DIAGNOSTIC SOFTWARE

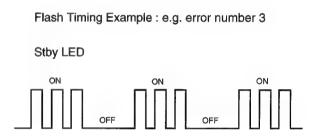
The identification of errors within the BE-5 chassis is triggered in 1 of 2 ways: -1: Bus busy or 2: Device failure to respond to I^2C . In the event of one of these situations arising the software will first try to release the Bus if busy (Failure to do sn will report with a continuous flashing LED) and then communicate with each relevant device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED by a Series of flashes which must be counted (See Table 1), Non fatal errors are reported with this method.

If a fatal error is found, the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue to operate.

To check error code it is necessary to use the TV error display part number S-188-900-10.

Table 1

No of Flashes	Error Codes	Meaning	
2	30	IC301 not acknowledging I ² C transmission, NVM OK.	
3	31	IC301 FAULT (Not OK) - flags	
4	32	IC301 - No H Flyback	
5	40	IC301 - Stack Overflow.	
6	90	Overvoltage / Overcurrent Protection (Pin 52) high.	
7	10	IC002 not acknowledging I ² C transmission, IC301 OK.	
8	20	IC002 and IC301 - No I ² C acknowledgment.	
9	01	General I ² C Error (SDA or SCL being held low)	
		(IC301, IC001, IC002, CN001)	

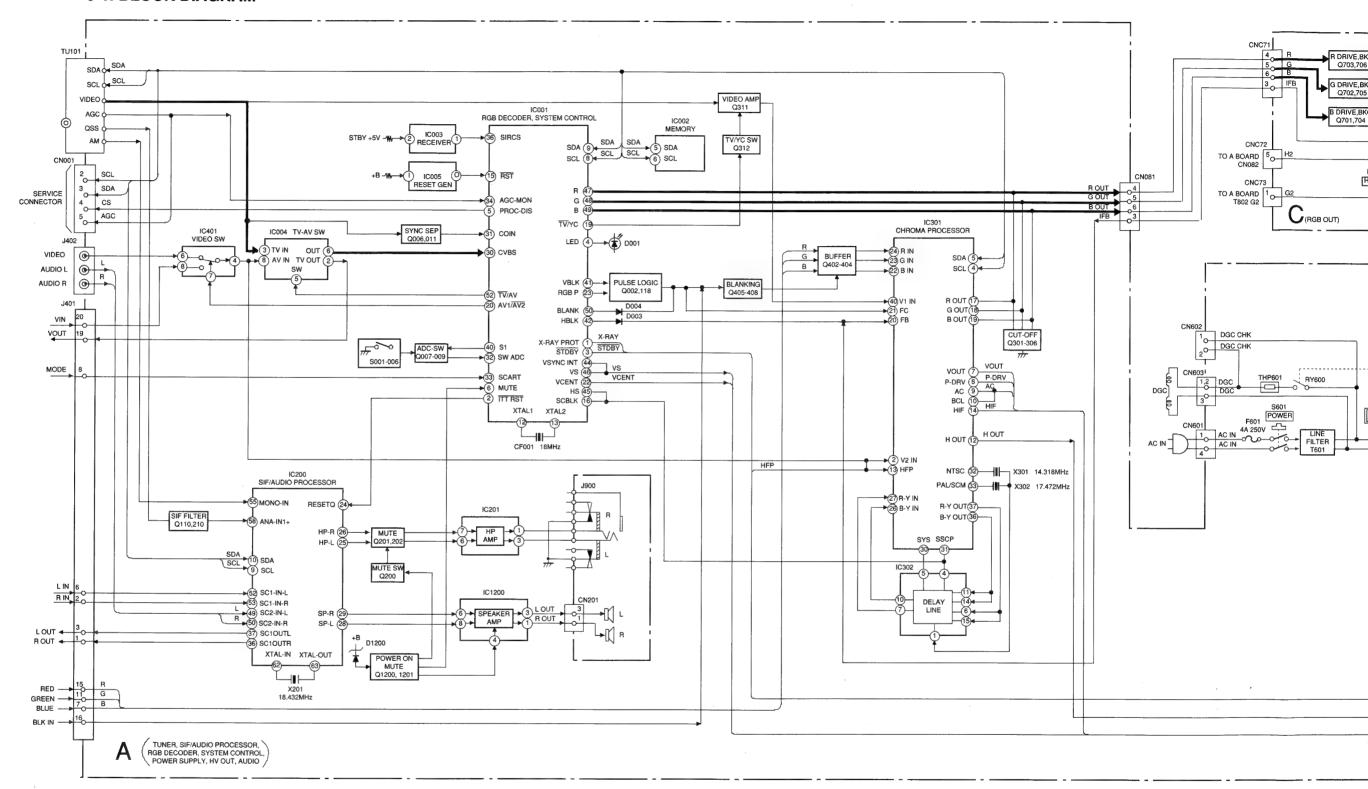


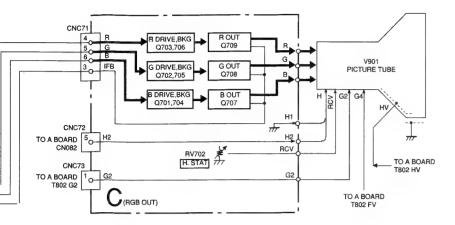
Note: Deflection System Adjustments should not be carried out whilst using an NTSC (60Hz) signal, or if the signal is unlocked.

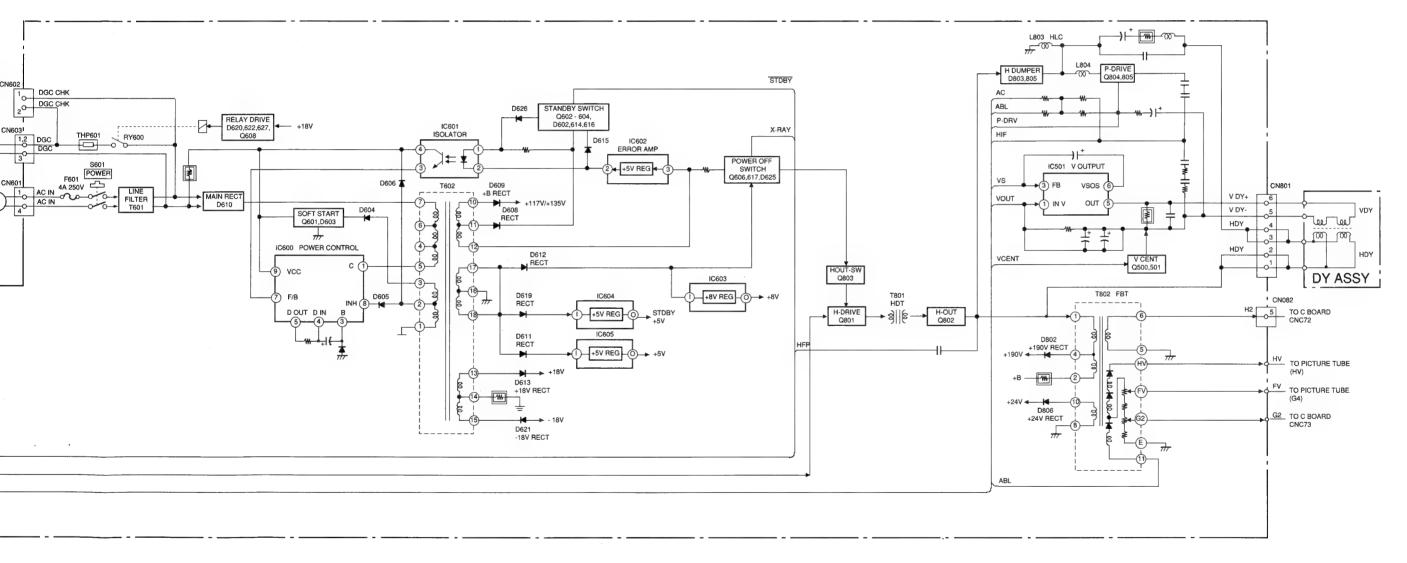
KV-21R1

MEMO			
	<u>.</u>		

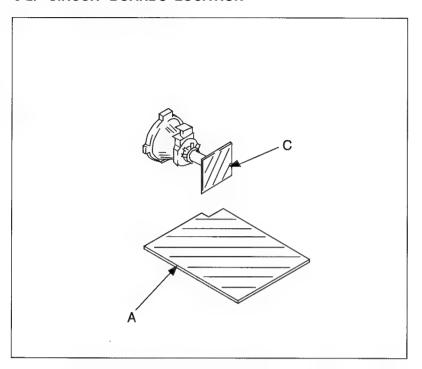
5-1. BLOCK DIAGRAM







5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.

k = 1000, M = 1000K

 Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm Rating electrical power ¹/₄ W

• : nonflammable resistor.

• : internal component.

• panel designation, or adjustment for repair.

 All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

earth - ground.
earth - chassis.

• # : no mounted.

Note: The components identified by shading and marked At are critical for safety. Replace only with the part number specified.

Reference information

RESISTOR	: HN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: 💥	ADJUSTABLE RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	:TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE

Readings are taken with a colour-bar signal input.

: ALB

: ALT

: ALR

- Readings are taken with 10M digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.

BIPOLAR

HIGH RIPPLE

HIGH TEMPERATURE

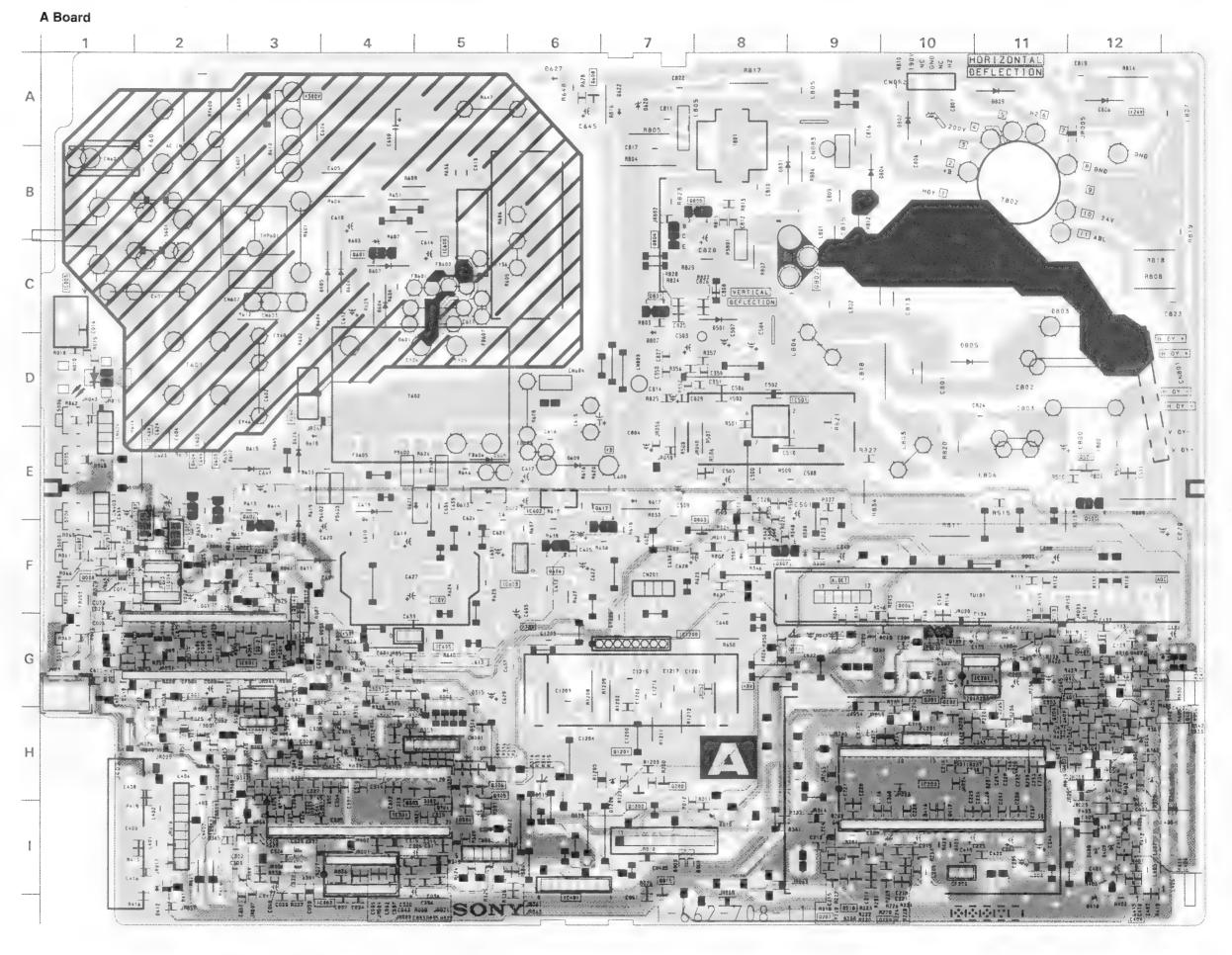
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.

• : B+ bus.

• : signal path. (RF)

A BOARD

A BOARI			
IC		DIOI	DE
IC001 IC002 IC003 IC004 IC005 IC200 IC201 IC301 IC302 IC401 IC501 IC600 IC601 IC602 IC603 IC604 IC605 IC1200	G-3 H-3 C-1 F-2 F-2 H-10 G-11 I-4 J-4 J-6 D-9 C-5 D-3 E-6 F-6 E-2 G-5 G-7	D001 D002 D003 D004 D005 D006 D007 D011 D301 D302 D401 D402 D403 D404 D405 D406 D407 D408 D409 D410	D-1 F-11 G-5 F-3 G-4 G-3 E-8 H-4 H-12 H-12 H-12 G-12 G-12 I-12 I-12
0000	E 2	D412	J-2
Q002 Q006 Q007 Q008 Q007 Q008 Q009 Q011 Q012 Q013 Q014 Q107 Q110 Q118 Q200 Q201 Q202 Q204 Q205 Q210 Q300 Q301 Q302 Q303 Q304 Q305 Q306 Q310 Q311 Q312 Q402 Q403 Q404 Q405 Q406 Q407 Q408 Q500 Q501 Q601 Q602 Q603 Q604 Q606 Q608 Q617 Q801 Q802 Q803 Q804 Q805 Q1200 Q1201	F-3 F-10 F-1	D415 D416 D417 D416 D417 D501 D602 D603 D604 D605 D606 D607 D608 D609 D610 D611 D612 D613 D614 D615 D616 D617 D619 D620 D621 D622 D625 D626 D627 D801 D802 D803 D805 D806 D807 D809 D1200	H-12 I-10 I-10 C-8 B-4 C-5 E-6 A-3 F-4 E-5 F-3 E-7 F-7 E-4 A-7 E-7 A-11 I-7





NOTE:

Pin No

2

6-7

8

10-11

13 14-15

16

4

6

8

2

3

5

2

5

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

Voltage (V)

4.7 1.3

1.4

0.2

1.4 4.7

1.1

1.6

2.1

3.0

2.7

3.0

28.3

1.4

20.0

28.6 2.6

15.8

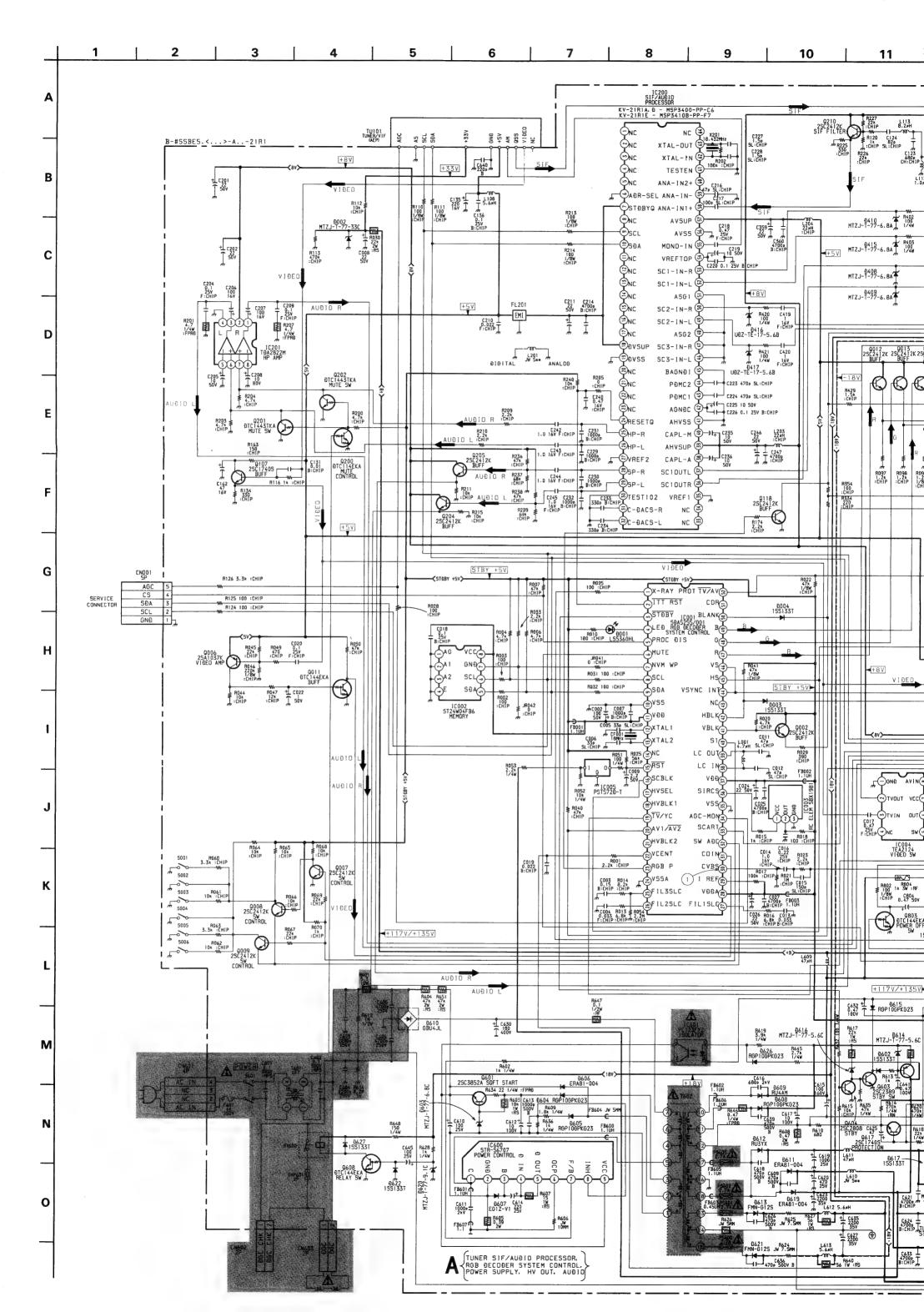
7.0 -16.0

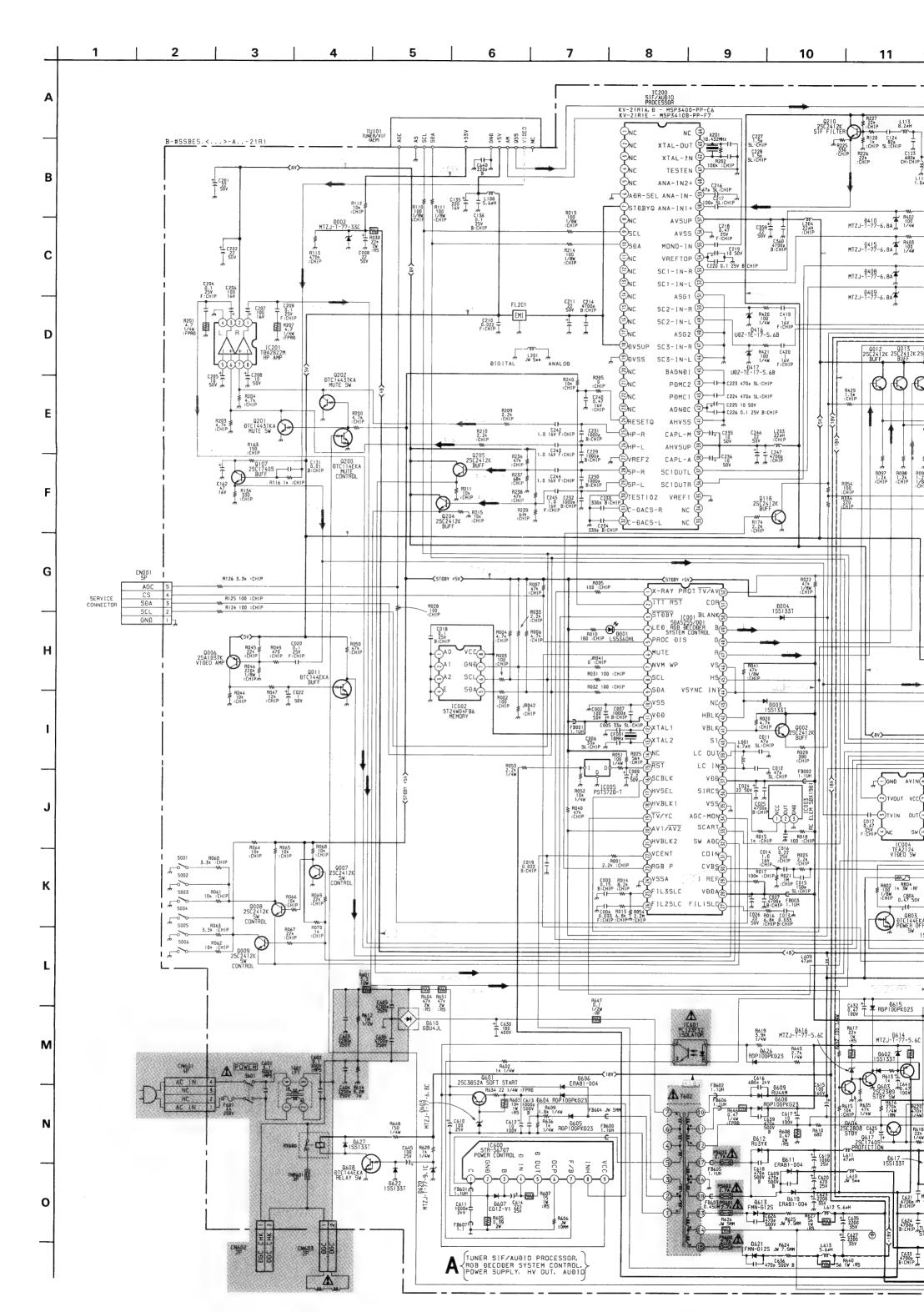
A BOARD IC VOLTAGE TABLE

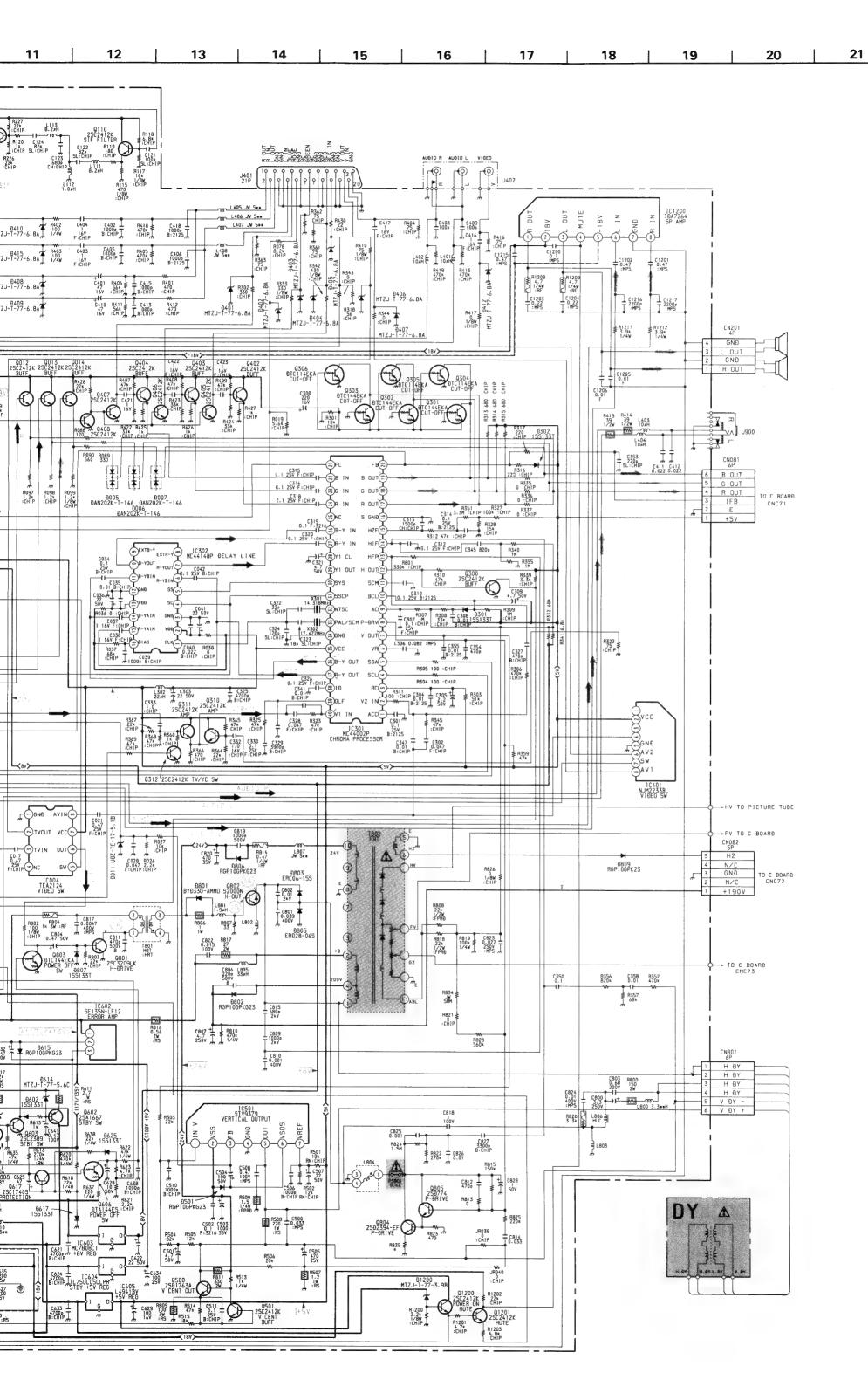
A BOA	RD IC V	OLTAGE TABL	Ε
		IC Volta	ge Table
Ref No	Pin No	Voltage (V)	Ref No
	2	2.0	
	3	2.2	
IC004	6	1.9	
	7	5.0	
	8	1.8	1C302
	7	4.8	
	9	3.1	
	10	3.1	
	18	4.8	
	24	4.5	
	31-32	3.8	IC401
	36-37	3.8	10401
	38	7.0	
IC200	39	8.0	
10200	40	7.0	
	42-45	3.8	IC501
	49-50	3.8	
	52-53	3.8	
	54	2.6	
	55	3.8	IC1200
	57	4.8	
	58-59	1.5	
	62-63	2.4	
	1	3.5	
	2	8.0	
IC201	3	3.5	
	5	0.5	
	8	0.5	
	1	1.6	
	2	0.8	
	3	1.3	
[4-5	3.3	
ĺ	6	0.9	
	7	1.5	
	8	1.0	
	9	1.3	
	10	2.3	
	11	1.6	
	12	0.3	
[13	0.4	
[14	1.0	
IC301	15	2.1	
10301	17-19	2.4	
	20	3.1	
	22-23	3.0	
	24	2.9	
	26-27	3.1	
	28	1.0	
	31	1.3	
	32-33	1.8	
	35	4.7	
	36	2.5	
	37	2.4	
[38	0.8	
	39	3.0	
	40	2.8	

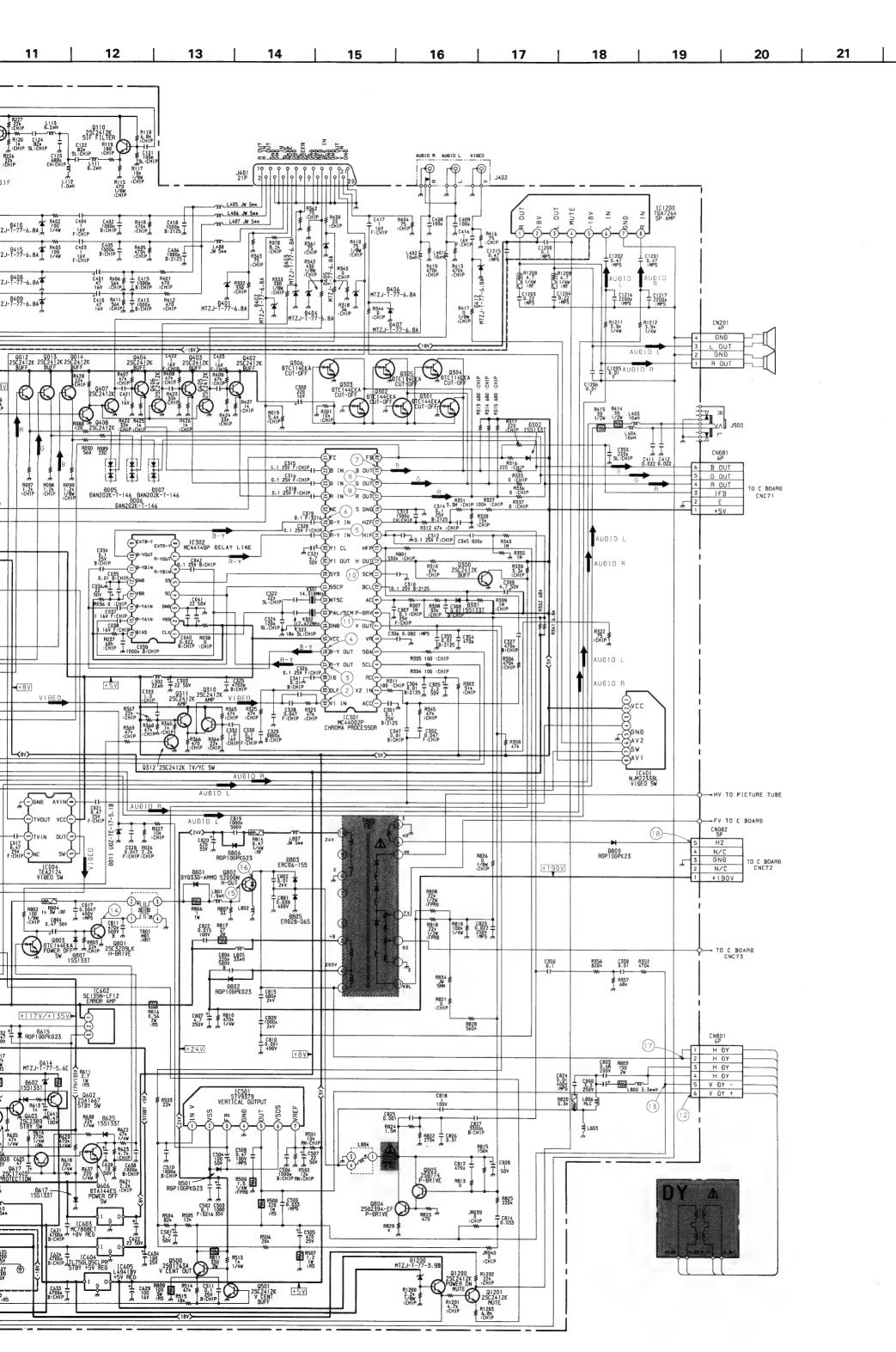
A BOARD TRANSISTOR TABLE

Т	Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter	
Q002	-	5.0	-	
Q006	4.6	0.7	4.8	
Q007	-	5.0	0	
Q008	5.0	5.0	4.5	
Q009	0.1	5.0	4.5	
Q011	0.6	5.0	0	
Q012	-	5.0	-	
Q013	-	5.0	-	
Q014	-	5.0	-	
Q110	4.6	8.0	4.0	
Q118	-	-	0	
Q201	-	-	0	
Q202	-	-	0	
Q204	4.7	8.0	4.0	
Q205	4.6	8.0	4.0	
Q210	3.5	8.0	2.9	
Q300	0.3	0.6	0	
Q301	0	2.0	0	
Q302	0	2.1	0	
Q303	0	2.2	0	
Q304	0	2.0	0	
Q305	0	2.1	0	
Q306	0	2.2	0	
Q310	1.7	5.0	3.0	
Q311	3.6	5.0	3.0	
Q312	-0.2	-	0	
Q403	-	-	-	
Q404	-	-	-	
Q500	5.4	19.7	4.8	
Q501	0.6	5.4	0	
Q601	-0.3	-2.2	-2.6	
Q602	68.0	8.0	68.4	
Q603	0	67.7	0	
Q604	0.6	0	0	
Q608	-	15.8	0	
Q801	0	120	0	
Q802	-0.2	120	0	
Q803	0.1	0.6	0	
Q804	0.5	16.0	-	
Q805	1.0	16.0	0.5	
Q1201	3.5	7.0	2.8	

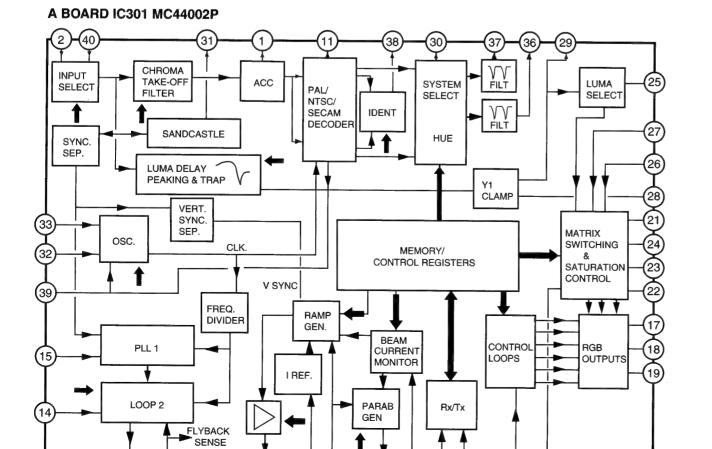


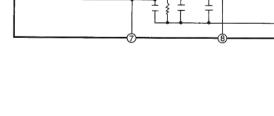






WAVEFORMS A BOARD (1) 3 4 PAL 2 4 SECAM/NTSC 1.0 Vp-p (H) 1.0 Vp-p (H) 5 PAL 5 SECAM 5 NTSC 6 SECAM 1.0 Vp-p (H) 0.5 Vp-p (H) 1.4 Vp-p (H) 1.1 Vp-p (H) 0.7 Vp-p (H) (6) NTSC 8 (10) -ՄՄ--ՈՄ--ՄՄԻ--ՄՄԻ 1.5 Vp-p (H) 2.3 Vp-p (H) 2.0 Vp-p (H) 0.8 Vp-p (H) 2.3 Vp-p (H) (11) (12) 13) (14) 15) 1.8 Vp-p (H) 8.4 Vp-p (H) 55 Vp-p (H) 220 Vp-p (H) 10 Vp-p (H) (18) (16) (17) A BOARD IC501 STV9379 OUTPUT STAGE FLYBACK SUPPLY GENERATOR SUPPLY VOLTAGE 210 Vp-p (H) 1.4KVp-p (H) 24 Vp-p (H) A BOARD IC200 MSP3400C-PP-C6/MSP3410B-PP-F7 INVERTING INPUT (1 POWER AMPLIFIER NON-INVERTING INPUT (7 SBUS Interface I2C Interface GROUND (58) DEMODULATOR D/A 60 D/A **►**(28) **A BOARD IC600 STR-S6707** IDENT **DFP** D/A **▶**(26) **►**(25) A/D START UP A/D D/A PRE REG (46)THERMA **SCART Switching Facilities**



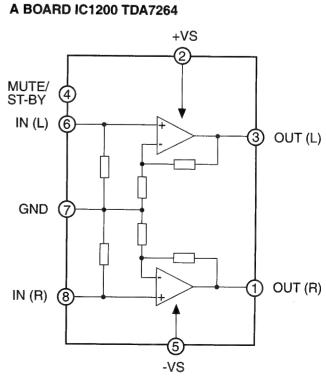


FLYBACK GENERATOR

THERMAL PROTECTION

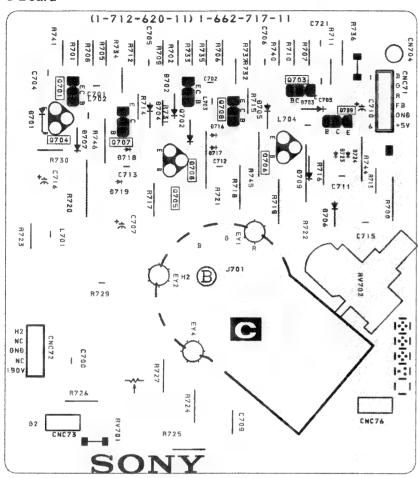
REF

(5) OUTPUT



(16)

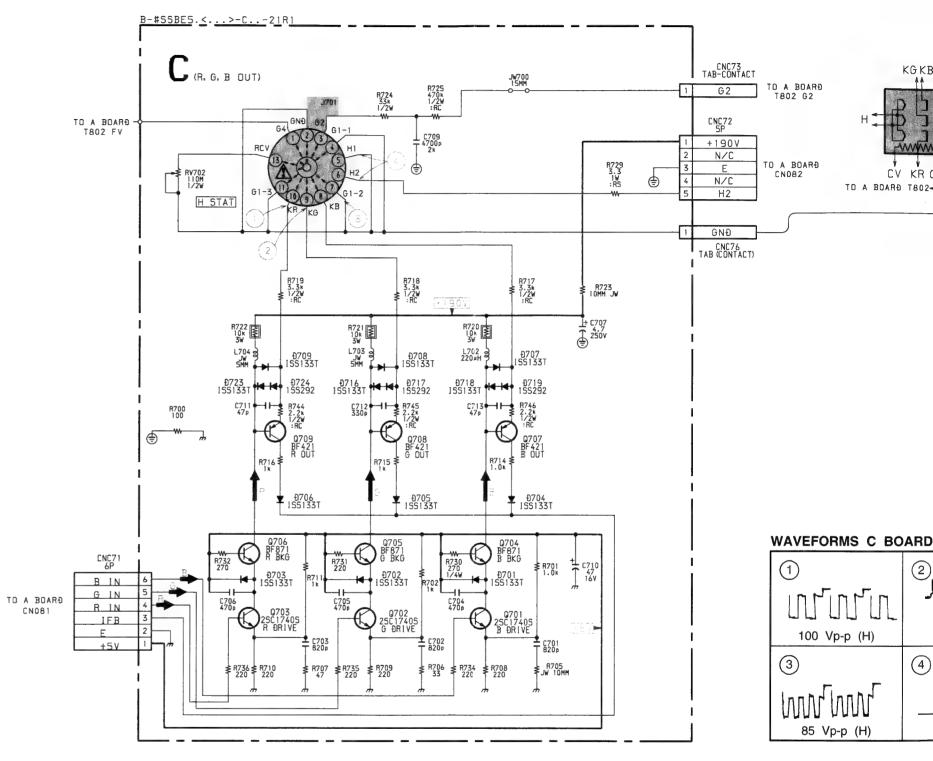
C Board



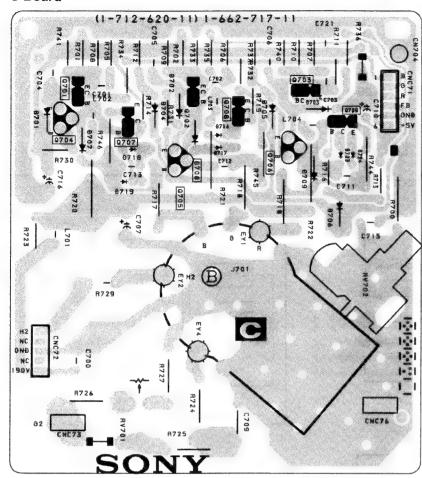
C BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table				
Ref No	B Base	C Collector	E Emitter	
Q701	2.5	4.3	1.8	
Q702	2.5	4.3	1.8	
Q703	2.3	4.3	1.7	
Q704	5.0	144.8	4.3	
Q705	5.0	149.2	4.3	
Q706	5.0	152.3	4.3	
Q707	144.8	3.5	152.3	
Q708	149.2	3.5	149.2	
Q709	151.7	3.5	172.1	



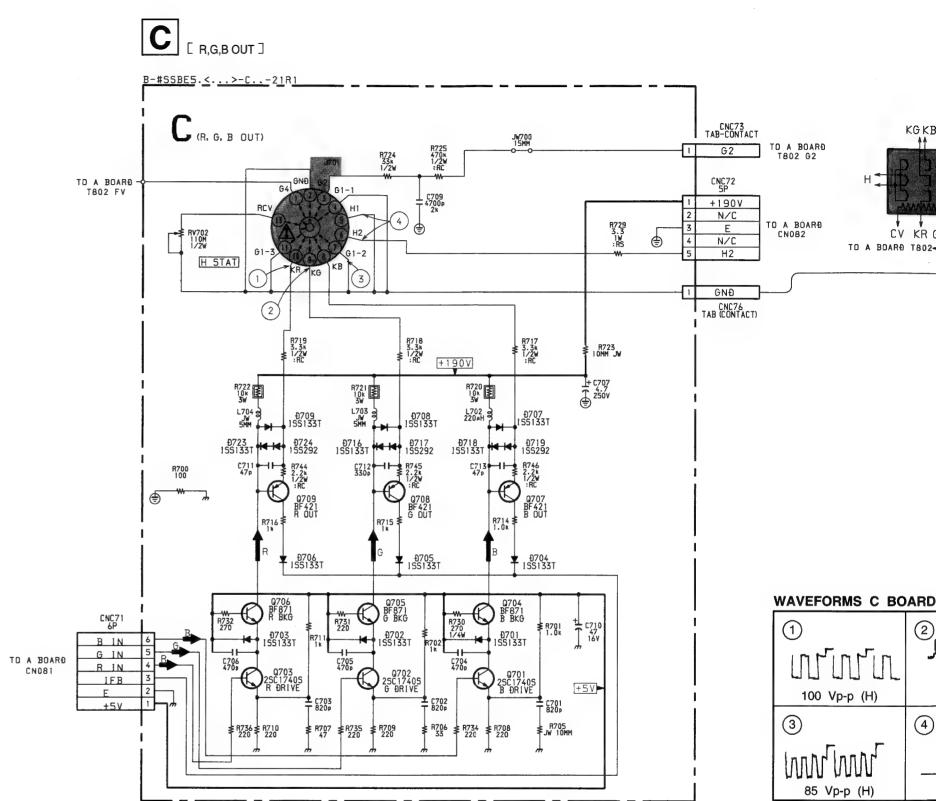


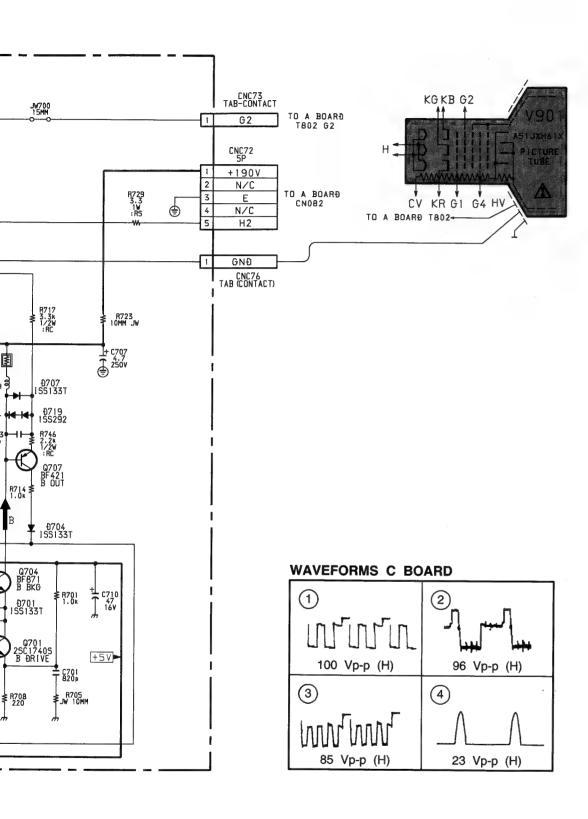
C Board



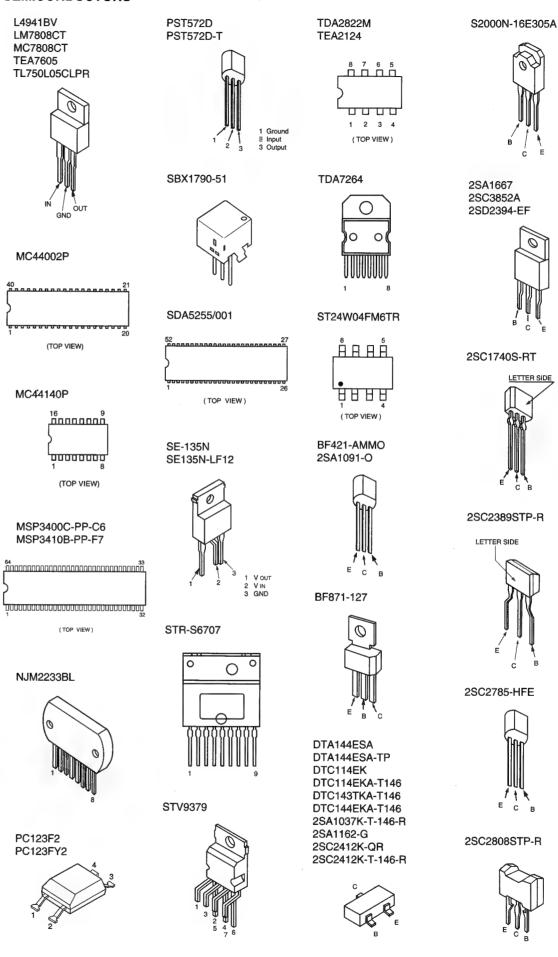
C BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table				
Ref No	B Base	C Collector	E Emitter	
Q701	2.5	4.3	1.8	
Q702	2.5	4.3	1.8	
Q703	2.3	4.3	1.7	
Q704	5.0	144.8	4.3	
Q705	5.0	149.2	4.3	
Q706	5.0	152.3	4.3	
Q707	144.8	3.5	152.3	
Q708	149.2	3.5	149.2	
Q709	151.7	3.5	172.1	





5-4. SEMICONDUCTORS



2SC3209 2SD774

2SD774

2SC4793

2SD1763

BYD33G BYD33G

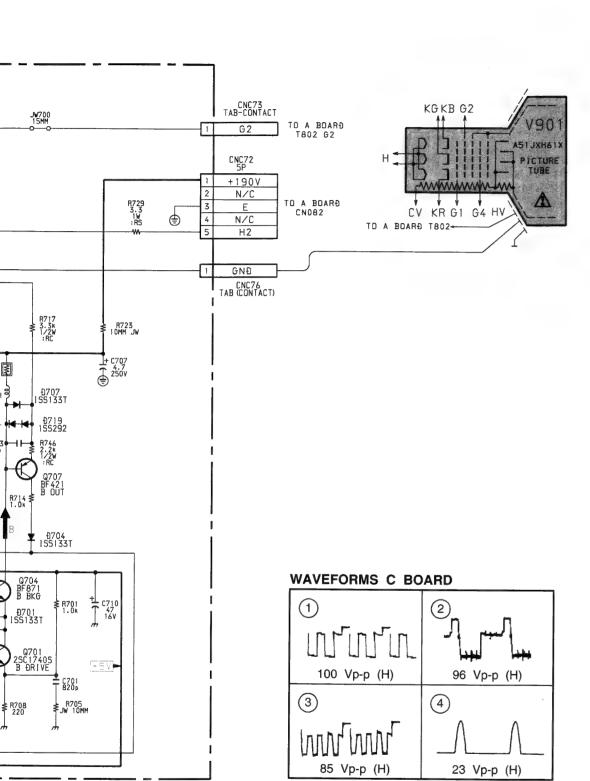
ERC06-1

DAN2021

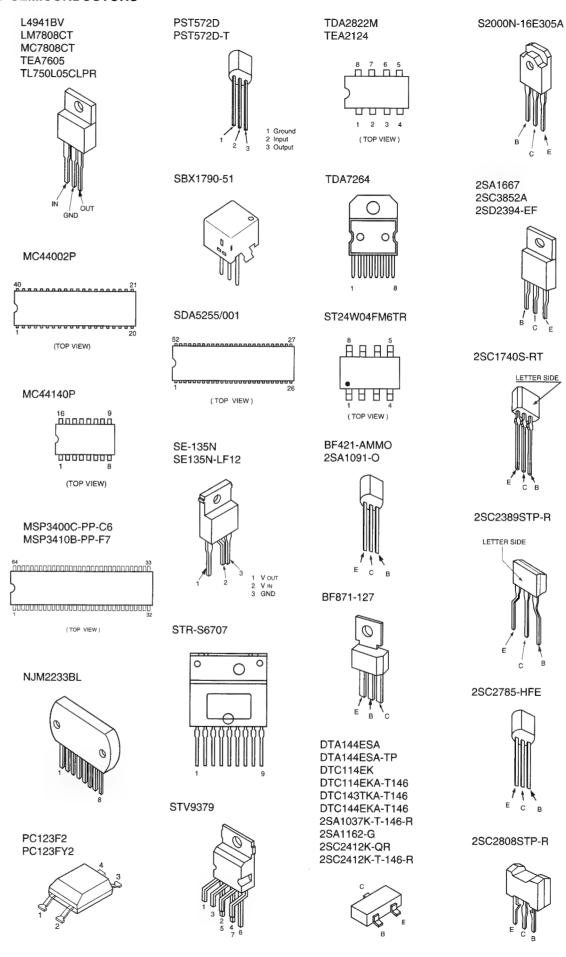
DTZ5.1B RD5.6S-E

UDZ-TE-

UDZ-TE-



5-4. SEMICONDUCTORS



2SC3209

2SD774

2SD774-

2SC4793

2SD1763

BYD33G

BYD33G

ERC06-1

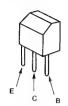
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UDZ-TE-

UDZ-TE-

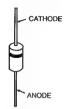
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2SC4793 2SD1763A

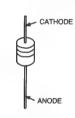


RGP10GPKG23 RU3YX-LF-C4 RU-3YX-V1 RU4AM-T3 1SS292T-77

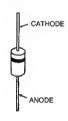




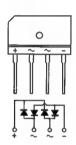
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BYD33G BYD33G-AMMO ERC06-15S



GBU4JL-6088

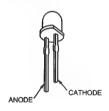


DAN202K DAN202K-T-146

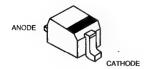


2 3 1

LR5360HL



DTZ5.1B RD5.6S-B UDZ-TE-17-5.1B UDZ-TE-17-5.6B



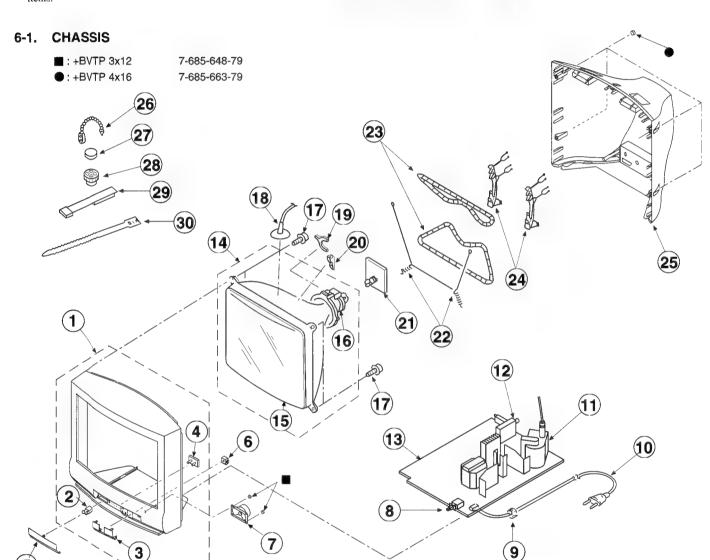
EXPLODED VIEWS

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked \hat{T}_{-} are critical for safety.

Replace only with the part number specified.



REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
1 2 3 4 5	X-4200-282-1 4-047-464-01 4-203-432-01 *4-203-431-01 4-203-430-01 4-203-435-31 4-203-435-31 1-503-258-21	BEZNET ASSY CATCHER, PUSH WINDOW GUIDE, LIGHT DOOR (BARE) (KV-21R1A/21R1D) DOOR (PAINTED) (KV-21R1E) BUTTON, POWER SPEAKER	2-4	15 16 17	*A-1632-541-A *A-1632-542-A *A-1632-453-A *A-1632-453-A 18-738-787-71 2-738-784-05 18-451-295-45 4-036-190-01 1540-006-22 1-452-277-00	THE RES CONTRACTOR AND ADDRESS OF ADDRESS AND ADDRESS	(KV-21R1D) (KV-21R1E) (169) (A51JXH61X) (Y21PFA2BA) (APPING
9 10 11 12	*4-202-531-01 *1-765-286-11 1-453-199-11 1-693-338-11	SWITCH PUSH (AC POWER) AC CORD LOCK (SC) CORD POWER TRANSFORMER ASSY, PLYBACE (TUNER (TUVIF) (AEP)	NX-1741/02A)	20 21 22 23	3-704-495-01 *A-1638-102-A 4-369-318-21	SPACER, DY C BOARD, COMPLETE SPRING TENSION COLL DEGAUSSING	

REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
24 25 26 27 28 29 30	*4-386-622-11 4-203-429-01 4-308-870-00 1-452-032-00 1-452-094-00 X-4387-214-1 3-701-007-00	BAND, DGC COVER (REAR) CLIP, LEAD WIRE MAGNET, DISK; 10MM Ø MAGNET, ROTATABLE DISK; 15MM PERMALLOY ASSY, CORRECTION BAND, BINDING	: Ø				

ELECTRICAL PARTS LIST

When indicating parts by reference number, please include the board name.

CAPACITORS

COILS

MF: mF, PF: mmF

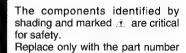
MMH: mH, μH : mH

 Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

 All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F: nonflammable



specified.



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION		REMARK
	*A-1632-541-A	A BOARD, COMPLETE (KV-21R1	A)	C122 C123	1-163-115-00 1-163-137-00		5% 5%	50V 50V
	*A-1632-542-A	A BOARD, COMPLETE (KV-21R1	D)	C124 C131	1-163-115-00 1-164-232-11	CERAMIC CHIP 82PF	5% 10%	50V 50V
	*A-1632-453-A	A BOARD, COMPLETE (KV-21R1	E)	C135	1-126-934-11		20%	16V
	4-202-373-01	SPRING, IC		C136 C162	1-164-004-11 1-126-967-11	ELECT 47MF	10% 20%	25V 16V
		SPACER, INSULATING SCREW (M3X10), P, SW (+)		C201 C202 C204	1-126-965-11 1-126-965-11 1-163-038-00	ELECT 22MF	20% 20%	50V 50V 25V
	< CAF	PACITOR >		C4V4	1-103-030-00	CHAMIC CHIP V.IMP		234
				C205	1-126-964-11		20%	50V
C002	1-126-968-11		0% 50V	C206	1-126-933-11		20%	16V
C003	1-164-492-11		0% 16V	C207	1-126-933-11		20%	16V
C004	1-163-034-00	CERAMIC CHIP 0.033MF	50V	C208	1-126-964-11		20%	50V
C005 C006	1-163-105-00 1-163-105-00	CERAMIC CHIP 33PF 5' CERAMIC CHIP 33PF 5'		C209	1-163-038-00			25V
				C210	1-163-033-91			50V
C007	1-163-009-11		0% 50V	C211	1-126-965-11		20%	50V
C008 C009	1-126-965-11		0% 50V	C214	1-163-017-00		10%	50V
	1-124-925-11		0% 50V	C216	1-163-109-00		5%	50V
C011 C012	1-163-109-00 1-163-109-00	CERAMIC CHIP 47PF 5' CERAMIC CHIP 47PF 5'	% 50V % 50V	C217	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
				C218	1-164-005-11			25V
C013	1-163-078-11		0% 25V	C219	1-126-964-11		20%	50V
C014		CERAMIC CHIP 0.033MF	50V	C220	1-164-004-11		10%	25V
C015			% 50V	C223	1-163-133-00		5%	50V
C016 C017	1-164-222-11 1-164-005-11		25V 25V	C224	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
				C225	1-126-964-11		20%	50V
C018	1-164-004-11		0% 25V	C226	1-164-004-11		10%	25V
C019			0% 50V	C227		CERAMIC CHIP 1.5PF	0.25PF	
C020		CERAMIC CHIP 0.1MF	25V	C228	1-163-084-00		0.25PF	
C021		CERAMIC CHIP 0.47MF	25V	C229	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C022	1-124-903-11	ELECT 1MF 2	0% 50V	2000	4 450 000 44		4.85	
C024	1 100 005 11	51 FGB 001m 0	00. F0**	C230	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C024	1-126-965-11		0% 50V 0% 50V	C231 C232	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C025	1-126-965-11		0% 50♥ 0% 50♥	C232	1 162 003 11	CERAMIC CHIP 0.001MF CERAMIC CHIP 330PF	10%	50V 50V
C027			0% 50V 0% 50V	C234	1-163-003-11	CERAMIC CHIP 330PF	10% 10%	50V
C028		CERAMIC CHIP 0.047MF	50V	C234	1-103-003-11	CERAMIC CHIP 330PF	10%	204
				C235	1-126-964-11		20%	50V
C034			0% 25V	C236	1-126-964-11		20%	50V
C035			0% 50V	C240		CERAMIC CHIP 0.47MF	10%	16V
C036	1-126-965-11		0% 50V	C242		CERAMIC CHIP 1MF		16V
C037		CERAMIC CHIP 1MF	16V	C243	1-164-346-11	CERAMIC CHIP 1MF		16V
C038	1-164-346-11	CERAMIC CHIP 1MF	16V	9044	1 151 215 11	GEN 1475 GUEN 447		1 (11
C039	1.162.000.44	GERANTO CUITO A AAANG	00. E017	C244		CERAMIC CHIP 1MF		16V
C040			0% 50V 0% 50V	C245		CERAMIC CHIP 1MF	0.00-	16V
C040	1-163-037-11			C246	1-126-965-11		20%	50V
C041			0% 50V 0% 25V	C247 C300		CERAMIC CHIP 0.0047MF	10%	50V
C121			u% ∡ov % 50V	C300	1-126-934-11	ELECT 220MF	20%	16V
CIBI	1-103-111-00	CHARIC CHIP IVUPP 3	4 70 E					



The components identified by shading and marked a are critical for safety.

Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION		REMARK	REF.NO.	PART NO.	DESCRIPTIO	N		REMARK
C301 C302 C303 C304 C305	1-164-004-11 1-163-035-00 1-126-965-11 1-164-232-11 1-124-257-00	CERAMIC CHIP 0.1MF CERAMIC CHIP 0.047MF ELECT 22MF CERAMIC CHIP 0.01MF ELECT 2.2MF	10% 20% 10% 20%	25V 50V 50V 50V 50V	C423 C500 C501 C502 C503	1-164-346-11 1-130-489-00 1-126-963-11 1-163-077-00 1-126-952-11	CERAMIC CHIP FILM ELECT CERAMIC CHIP ELECT	0.033MF 4.7MF	5% 20% 20%	16V 50V 50V 50V 35V
C306 C307 C308 C309 C310	1-107-380-91 1-163-038-00 1-164-232-11 1-126-163-11 1-164-004-11	FILM 0.0082MF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.01MF ELECT 4.7MF CERAMIC CHIP 0.1MF	5% 10% 20% 10%	200V 25V 50V 50V 25V	C504 C505 C506 C507 C508	1-126-968-11 1-126-941-11 1-163-009-11 1-126-965-11 1-130-785-11	ELECT ELECT CERAMIC CHIP ELECT MYLAR	100MF 470MF 0.001MF 22MF 0.47MF	20% 20% 10% 20% 10%	50V 25V 50V 50V 100V
C312 C313 C314 C315 C316	1-163-038-00 1-163-145-00 1-164-004-11 1-163-038-00 1-163-038-00	CERAMIC CHIP 0.1MF CERAMIC CHIP 0.0015MF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.1MF	5% 10%	25V 50V 25V 25V 25V	C602 A	1-163-009-11 1-164-004-11 1-136-516-12 1-136-516-12 1-113-890-61	CERAMIC CHIP CERAMIC CHIP FILM FILM ELECT		10% 10% 20% 20% 20%	50V 25V 300V 300V 250V
C318 C319 C320 C321 C322	1-163-038-00 1-163-077-00 1-163-038-00 1-126-963-11 1-163-101-00	CERAMIC CHIP 0.1MF CERAMIC CHIP 0.1MF CERAMIC CHIP 0.1MF ELECT 4.7MF CERAMIC CHIP 22PF	20% 5%	25V 50V 25V 50V 50V	C605 1.8	1-113-890-61 1-161-964-91 1-161-964-91 1-102-228-00 1-104-665-11	CHRAMIC	0.0022MF 0.0047MF 0.0047MF 470PF 100MF	20% 10% 20%	250V 250V 250V 500V 25V
C323 C324 C325 C326 C327	1-163-099-00 1-163-119-00 1-163-017-00 1-163-038-00 1-163-005-11	CERAMIC CHIP 18PF CERAMIC CHIP 120PF CERAMIC CHIP 0.0047MF CERAMIC CHIP 0.1MF CERAMIC CHIP 470PF	5% 5% 10%	50V 50V 50V 25V 50V	C611 C612 C613 C614 C615	1-161-754-00 1-107-929-11 1-162-318-11 1-104-666-11 1-124-347-00	CERAMIC ELECT CERAMIC ELECT ELECT	0.001MF 10MF 0.001MF 220MF 100MF	10% 20% 10% 20% 20%	2KV 100V 500V 25V 160V
C328 C329 C330 C332 C333	1-163-035-00 1-163-016-00 1-163-038-00 1-164-346-11 1-164-346-11	CERAMIC CHIP 0.047MF CERAMIC CHIP 0.0039MF CERAMIC CHIP 0.1MF CERAMIC CHIP 1MF CERAMIC CHIP 1MF	10%	50V 50V 25V 16V	C616 C617 C618 C619 C620	1-162-116-00 1-107-929-11 1-102-228-00 1-126-942-61 1-126-941-11	CERAMIC ELECT CERAMIC ELECT ELECT	680PF 10MF 470PF 1000MF 470MF	10% 20% 10% 20% 20%	2KV 100V 500V 25V 25V
C341 C345 C347 C350 C353	1-164-232-11 1-163-139-00 1-164-232-11 1-163-038-00 1-163-125-00	CERAMIC CHIP 0.01MF CERAMIC CHIP 820PF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.1MF CERAMIC CHIP 220PF	10% 5% 10%	50V 50V 50V 25V 50V	C621 C622 C623 C624 C625	1-163-017-00 1-126-965-11 1-124-618-11 1-163-017-00 1-126-967-11	CERAMIC CHIP ELECT ELECT CERAMIC CHIP ELECT	22MF 2200MF	10% 20% 20% 10% 20%	50V 50V 35V 50V 50V
C354 C355 C358 C359 C360	1-163-197-00 1-164-232-11 1-164-232-11 1-126-965-11 1-163-017-00	CERAMIC CHIP 470PF CERAMIC CHIP 0.01MF CERAMIC CHIP 0.01MF ELECT 22MF CERAMIC CHIP 0.0047MF	10% 10% 10% 20% 10%	50V 50V 50V 50V 50V	C626 C627 C628 C629 C630	1-102-228-00 1-111-097-11 1-126-964-11 1-124-455-00 1-113-473-11	CERAMIC ELECT ELECT ELECT ELECT (BLOCK)	470PF 0.0022F 10MF 100MF 180MF	10% 20% 20% 20% 20%	500V 35V 50V 16V 400V
C401 C402 C403 C404 C405	1-164-346-11 1-164-346-11	CERAMIC CHIP 0.001MF CERAMIC CHIP 1MF CERAMIC CHIP 1MF CERAMIC CHIP 0.001MF	20% 10% 10%	16V 50V 16V 16V 50V	C632 C633 C634 C635 C636	1-106-220-00 1-163-017-00 1-104-665-11 1-111-097-11 1-102-228-00	ELECT ELECT	0.1MF 0.0047MF 100MF 0.0022F 470PF	10% 10% 20% 20% 10%	100V 50V 25V 35V 500V
C406 C408 C409 C410 C411	1-163-009-11 1-101-810-00 1-101-810-00 1-126-967-11 1-137-372-11	CERAMIC 100PF ELECT 47MF	10% 5% 5% 20% 5%	50V 500V 500V 16V 50V	C638 C639 C640 C641 C645	1-163-009-11 1-102-228-00 1-102-110-00 1-104-797-11 1-104-665-11	CERAMIC ELECT	0.001MF 470PF 220PF 0.47MF 100MF	10% 10% 10% 20% 20%	50V 500V 50V 100V 25V
C412 C413 C415 C416 C417	1-163-009-11 1-164-346-11	FILM 0.022MF CERAMIC CHIP 0.001MF CERAMIC CHIP 10.001MF CERAMIC CHIP 1MF CERAMIC CHIP 1MF	5% 10% 10%	50V 50V 50V 16V 16V	C800 C801 C802 C803 C804	1-107-650-11 1-129-746-00 1-136-079-00 1-136-109-00 1-124-902-00	FILM FILM FILM	3.3MF 0.039MF 0.01MF 0.68MF 0.47MF	20% 10% 3% 5% 20%	250V 400V 2KV 200V 50V
C418 C419 C420 C421 C422	1-164-346-11 1-164-346-11	CERAMIC CHIP 0.001MF CERAMIC CHIP 1MF CERAMIC CHIP 1MF CERAMIC CHIP 1MF CERAMIC CHIP 1MF	10%	50V 16V 16V 16V 16V	C806 C807 C809 C810 C811	1-102-244-00 1-107-651-11 1-161-754-00 1-129-702-00 1-102-228-00	ELECT CERAMIC FILM	220PF 4.7MF 0.001MF 0.001MF 470PF	10% 20% 10% 10% 10%	500V 250V 2KV 400V 500V
				1						

The components identified by shading and marked in are critical for safety.

Replace only with the part number specified.



REF.NO.	PART NO.	DESCRIPTION		REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C812 C814 C815 C817 C818	1-163-197-00 1-136-159-00 1-162-116-00 1-136-559-11 1-136-933-11	CERAMIC 680PF MYLAR 0.0047MF	10% 5% 10% 10% 5%	50V 50V 2KV 400V 100V	D415 D416 D417 D501	8-719-158-15 8-719-158-15 8-719-302-43		
C819 C820 C822 C823 C824	1-162-318-11 1-126-951-11 1-104-696-11 1-106-375-12 1-106-367-00	ELECT 470MF FILM 0.015MF MYLAR 0.022MF	10% 20% 10% 10% 10%	500V 35V 100V 250V 400V	D602 D603 D604 D605 D606	8-719-109-97 8-719-302-43 8-719-302-43 8-719-980-78	DIODE EL1Z DIODE ERA83-006	
C825 C826 C827 C828 C1200	1-164-232-11		10% 10% 10% 20% 5%	50V 100V 50V 50V 50V	D607 D608 D609 D610 D611	8-719-302-43 8-719-312-10 8-719-025-88 8-719-980-78	DIODE RU4AM-T3 DIODE GBU4JL-6088 DIODE ERA83-006	
C1201 C1202 C1203 C1204 C1205	1-136-173-00 1-136-173-00 1-136-169-00 1-136-169-00 1-101-004-00	FILM 0.47MF FILM 0.22MF FILM 0.22MF	5% 5% 5% 5%	50V 50V 50V 50V 50V	D612 D613 D614 D615 D616	8-719-058-38 8-719-109-89 8-719-302-43 8-719-109-89	DIODE RD5.6ESB2	
C1206 C1215 C1216 C1217	1-101-004-00 1-136-173-00 1-137-366-11 1-137-366-11	FILM 0.47MF FILM 0.0022MF	5% 5% 5%	50V 50V 50V 50V	D617 D619 D620 D621 D622	8-719-980-78 8-719-110-14 8-719-058-38	DIODE 1SS133T-77 DIODE ERA83-006 DIODE RD9.1ES-B3 DIODE FMN-G12S DIODE 1SS133T-77	
	< FII	TER >			D625 D626	8-719-991-33 8-719-302-43	DIODE 1SS133T-77	
CF001	1-767-120-21	VIBRATOR, CERAMIC (18MH	lz)		D627	8-719-991-33	DIODE 1SS133T-77	
	< COM	NECTOR >			D801 D802	8-719-950-57 8-719-302-43	DIODE BYD33G DIODE EL1Z	
CN001 CN081 CN082 CN201	*1-568-881-51 *1-568-880-51 *1-568-879-11	PIN, CONNECTOR 5P PIN, CONNECTOR 6P PIN, CONNECTOR 5P PIN, CONNECTOR 4P PIN, CONNECTOR 1PCORN	tilit		D803 D805 D806 D807 D809	8-719-928-08 8-719-302-43	DIODE 1SS133T-77	
CN602 CN603 CN801	1 1-508-786-00	PIN, CONNECTOR (5MM PIT PIN, CONNECTOR (5MM PIT CONNECTOR PIN (DY) 6P	CH) IF CF) 2P		D1200	8-719-109-72 < FUS	DIODE RD3.9ES-B2	
					15.627 S S.A			A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.
D001	< DIC	DIODE LS5360HL			Man 1 1 2 2		RITE BEAD >	
D002 D003 D004 D005	8-719-982-27 8-719-991-33 8-719-991-33	DIODE MTZJ-33C DIODE 1SS133T-77 DIODE 1SS133T-77 DIODE DAN202K			FB001 FB002 FB003 FB600	1-412-911-11 1-412-911-11 1-412-911-11	INDUCTOR, FERRITE B INDUCTOR, FERRITE B INDUCTOR, FERRITE B FERRITE BEAD INDUCT	EAD 1.1UH EAD 1.1UH
D006 D007 D011 D301 D302	8-719-914-43 8-719-976-XX 8-719-991-33	DIODE DAN202K DIODE DAN202K DIODE DTZ5.1B DIODE 1SS133T-77 DIODE 1SS133T-77			FB601 FB602 FB603 FB605	1-410-397-21 1-412-911-11 1-410-396-41	FERRITE BEAD INDUCT INDUCTOR, FERRITE B FERRITE BEAD INDUCT INDUCTOR, FERRITE B	OR 1.1UH EAD 1.1UH OR 0.45UH
D401 D402		DIODE RD6.8ES-B2 DIODE RD6.8ES-B2			FB606 FB607		INDUCTOR, FERRITE B INDUCTOR, FERRITE B	
D403 D404 D405	8-719-109-97 8-719-109-97	DIODE RD6.8ES-B2 DIODE RD6.8ES-B2 DIODE RD6.8ES-B2			FL201	< ENC	APSULATED FILTER >	
D406 D407		DIODE RD6.8ES-B2 DIODE RD6.8ES-B2				< IC	>	
D408 D409 D410	8-719-109-97 8-719-109-97	DIODE RD6.8ES-B2 DIODE RD6.8ES-B2 DIODE RD6.8ES-B2			IC001 IC002 IC003 IC004	8-759-432-32	IC SDA5255/001 IC ST24W04FM6TR RAY CATCHER ELEMENT	SBX1981-51
D412	8-719-109-97	DIODE RD6.8ES-B2			IC005	8-759-510-54		



The components identified by shading and marked A are critical for safety.

Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION		REMARK
IC200	8-759-429-98	IC MSP3410B-PP-F	6 (KV-21R1A/21R1D) 7 (KV-21R1E)	Q014 Q107		TRANSISTOR 2SC2412 TRANSISTOR 2SC2785		
IC201	8-759-502-21	IC TDA2822M		0440	0 700 000 74	mnawaramon aggalla	מס ש	
IC301	8-759-333-45	IC MC44002P		Q110	0 720 020 74	TRANSISTOR 2SC2412 TRANSISTOR 2SC2412	K-OD	
IC302	8-759-333-46	IC MC4414UP		Q118 Q200		TRANSISTOR DTC114E		
70401	0.750.064.01	IC NJM2233BL		Q200 Q201		TRANSISTOR DTC143T		
IC401 IC501	8-759-104-91	TC CONTO 270		Q201 Q202	8-729-027-56			
IC600	8-749-924-99	TC STR-S6707		2202	0 723 027 30			
IC601	8-749-019-64	IC PGIDRED		Q204	8-729-920-74	TRANSISTOR 2SC2412	K-QR	
IC602	8-749-920-61	IC SE-135N		Q205		TRANSISTOR 2SC2412		
				Q210	8-729-920-74	TRANSISTOR 2SC2412	K-QR	
IC603	8-759-507-29	IC LM7808CT		Q300	8-729-920-74	TRANSISTOR 2SC2412	K-QR	
IC604	8-759-250-63	IC TL750L05CLPR		Q301	8-729-900-53	TRANSISTOR DTC114E	ar.	
IC605 IC1200	8-759-510-52 8-759-250-68			0302	8-729-900-53	TRANSISTOR DTC114E	e K	
101200	0-/33-230-00	IC IDA/204		Q303		TRANSISTOR DTC114E		
	< 800	KET >		Q304	8-729-900-53			
	(500	74166		Q305		TRANSISTOR DTC114E		
J401	1-561-534-00	SOCKET PIN 21P		Q306	8-729-900-53	TRANSISTOR DTC114F	eK.	
J402		JACK, PIN 3P						
J900	1-764-606-11	JACK		Q310		TRANSISTOR 2SC2412		
				Q311 Q312		TRANSISTOR 2SC2412 TRANSISTOR 2SC2412		
	< CO1	ГГ >		Q312 Q402	9-729-920-74	TRANSISTOR 2SC2412	K-UR	
L001	1-408-405-00	TATOTTOMOD A	.7UH	Q402 Q403		TRANSISTOR 2SC2412		
L108	1-412-522-41		.6UH	0403	0 725 520 12	110410101011 11001111		
L111	1-408-408-00		.2UH	Q404	8-729-920-74	TRANSISTOR 2SC2412	R-QR	
L112	1-408-397-00		UH	Q405		TRANSISTOR 2SC2412		
L113	1-408-408-00	INDUCTOR 8	.2UH	Q406		TRANSISTOR 2SC2412		
				Q407		TRANSISTOR 2SC2412		
L203			2UH	Q408	8-729-920-74	TRANSISTOR 2SC2412	K-QR	
L204			2UH	Q500	9_729_017_06	TRANSISTOR 2SC4793	1	
L302 L401	1-408-607-31 1-408-409-00		2UH .OUH	Q501		TRANSISTOR 2SC2412		
L402	1-408-409-00	TAIDUCTOR 1	HUO.	0601	8-729-025-04	TRANSISTOR 2SC3852	A A	
11402	1-400-403-00	INDUCTOR	.002	Q602	8-729-320-28	TRANSISTOR 2SA166	7	
L403	1-408-409-00	INDUCTOR 1	HUO.	Q603		TRANSISTOR 2SC2389		
L404	1-408-409-00		.OUH					
L609	1-412-533-21		7UH	Q604		TRANSISTOR 2SC2808		
L611	1-412-533-21		7UH	Q606	8-729-029-56	TRANSISTOR DTA1441 TRANSISTOR DTC1441	55A 273_7116	
L612	1-412-522-41	INDUCTOR	6.6UH	Q608 Q617		TRANSISTOR DIC144		
L613	1-412-522-41	INDUCTOR	5.6UH	0801		TRANSISTOR 2SC276.		
L800	1-412-553-11		3.3MMH	2001	0 /25 210 50		-	
L801	1-420-872-00			Q802	8-729-033-85	TRANSISTOR S2000N-	-16E305A	
L802		COIL, AIR-CORE		Q803	8-729-027-59	TRANSISTOR DTC144	3KA-T146	
L803		COIL (WITH CORE)		Q804		TRANSISTOR 2SD2394		
				Q805		TRANSISTOR 2SD774		
L804		COIL(WITH CORE)	1 2 ****	Q1200	8-729-920-74	TRANSISTOR 2SC2412	ZK-QK	
L805 L806	1-412-531-31 1-459-652-12		33UH	Q1201	8-729-920-74	TRANSISTOR 2SC241	2K-QR	
					. 000	SISTOR >		
	< 1C	LINK >			< RE:	51510K >		
P\$600 A	1-532-686-21	DEPT. IC 2:11 ((CE-119)	JR003		METAL GLAZE 0	5%	1/10W
P6601	144111486-41	才的现在分词 25.71~(JR004	1-216-295-00	METAL GLAZE 0	5%	1/10W
P6842 4	1-521-06-11	IX 表針。	411 man mark	JR005	1-216-296-00	METAL GLAZE 0	5%	1/8W
E8603 7	1:5:27 (8) 41	14年,1777年		JR006		METAL GLAZE 0	5%	1/10W 1/10W
PS801	1-332-68-06	f4.100, 1011.00 f		JR007	1-710-732-00	METAL GLAZE 0	5%	T/ TON
	< ₹₽	ANSISTOR >		JR008		METAL GLAZE 0	5%	1/10W
				JR009	1-216-296-00	METAL GLAZE 0	5%	1/8W
Q002	8-729-920-74	TRANSISTOR 2SC24	112K-QR	JR010		METAL GLAZE 0	5%	1/8W
Q006	8-729-216-22	TRANSISTOR 2SA1	L62-G	JR011		METAL GLAZE 0	5%	1/8W
Q007		TRANSISTOR 2SC2		JR012	1-216-296-00	METAL GLAZE 0	5%	1/8W
8000		TRANSISTOR 2SC24		JR013	1-216-295-00	METAL GLAZE 0	5%	1/10W
Q009	0-143-940-/4	TUMBERTON ADCA	***VAu	JR014		METAL GLAZE 0	5%	1/10W
Q011	8-729-027-59	TRANSISTOR DTC1	44EKA-T146	JR015	1-216-296-00	METAL GLAZE 0	5%	1/8W
Q012	8-729-920-74	TRANSISTOR 2SC2	112K-QR	JR016		METAL GLAZE 0	5%	1/10W
Q013		TRANSISTOR 2SC2		JR018	1-216-296-00	METAL GLAZE 0	5%	1/8W



REF.NO.	PART NO.	DESCRIPTIO	N		REMARK	REF.NO.	PART NO.	DESCRIPTIO	N		REMA	ات. RK
			_						_			
JR019	1-216-296-00	METAL GLAZE	0	5%	1/8W	R050	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
JR020	1-216-296-00	METAL GLAZE	0	5%	1/8W	R051	1-247-807-31	CARBON	100	5%	1/4W	
JR021	1-216-296-00	METAL GLAZE	0	5%	1/8W	2050	1 040 400 41	G3 DD AM	107	F0.	1 / 417	
JR022	1-216-296-00	METAL GLAZE	0	5%	1/8W	R052 R053	1-249-429-11 1-249-421-11	CARBON CARBON	10K 2.2K	5% 5%	1/4W 1/4W	
JR023	1-216-295-00	METAL GLAZE	0	5%	1/10W	R054	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
JR024	1-216-295-00	METAL GLAZE	0	5%	1/10W	R060	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
JR025	1-216-296-00	METAL GLAZE	Ö	5%	1/8W	R061	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
JR026	1-216-296-00	METAL GLAZE	Ö	5%	1/8W						_,	
JR028	1-216-296-00	METAL GLAZE	0	5%	1/8W	R062	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
JR029	1-216-296-00	METAL GLAZE	0	5%	1/8W	R063	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
					4.44	R064	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
JR030	1-216-296-00	METAL GLAZE	0	5%	1/8W	R065	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
JR032	1-216-296-00	METAL GLAZE METAL GLAZE	0	5% 5%	1/8W 1/10W	R066	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
JR033 JR034	1-216-295-00 1-216-296-00	METAL GLAZE	0	5% 5%	1/10W 1/8W	R067	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
JR036	1-216-296-00	METAL GLAZE	0	5%	1/8W	R068	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
011030	1 210 250 00	Marina Canada	•	•	27011	R069	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
JR038	1-216-295-00	METAL GLAZE	0	5%	1/10W	R070	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
JR039	1-216-296-00	METAL GLAZE	0	5%	1/8W	R078	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
JR040	1-216-295-00	METAL GLAZE	0	5%	1/10W						4.44.55	
JR041	1-216-295-00	METAL GLAZE	0	5%	1/10W	R088	1-216-027-00	METAL GLAZE	120	5%	1/10W	
JR042	1-216-295-00	METAL GLAZE	0	5%	1/10W	R089	1-216-037-00	METAL GLAZE	330	5% 5%	1/10W	
JR044	1-216-295-00	METAL GLAZE	0	5%	1/10W	R090 R097	1-216-043-91 1-216-051-00	METAL GLAZE METAL GLAZE	560 1.2K	5%	1/10W 1/10W	
JR046	1-216-296-00	METAL GLAZE	0	5%	1/8W	R098	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
01/040	1 210 270 00	HEIRE GERAL	v	3.0	27011	2000	1 110 031 00				2, 20	
R001	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R099	1-216-200-11	METAL GLAZE	1.2K	5%	1/8W	
R002	1-216-025-00	METAL GLAZE	100	5%	1/10W	R110	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R003	1-216-025-00	METAL GLAZE	100	5%	1/10W	R111	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R004 R005	1-216-065-00 1-216-025-00	METAL GLAZE METAL GLAZE	4.7K 100	5% 5%	1/10W 1/10W	R112 R113	1-216-073-00 1-216-113-71	METAL GLAZE METAL GLAZE	10K 470K	5% 5%	1/10W 1/10W	
KUUS	1-216-023-00	METAL GLAZE	100	20	1/10#	VIII	1-210-113-71	METAL GLADE	4 / UI	370	1/1011	
R006	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	R115	1-216-190-00	METAL GLAZE	470	5%	1/8W	
R007	1-216-089-00		47K	5%	1/10W	R116	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R010	1-216-031-00		180	5%	1/10W	R117	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R013 R014	1-216-069-00		6.8K 8.2K	5% 5%	1/10W	R118 R119	1-216-069-00 1-216-031-00	METAL GLAZE METAL GLAZE	6.8K 180	5% 5%	1/10W 1/10W	
VOTA	1-216-071-00	METAL GLAZE	0.41	30	1/10W	KIIJ	1-210-031-00	METAL GLAZE	100	3.0	1/1011	
R015	1-216-049-00		1K	5%	1/10W	R120	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R016	1-216-069-00		6.8K	5%	1/10W	R124	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R017	1-216-097-00		100K	5%	1/10W	R125	1-216-025-00 1-216-061-00	METAL GLAZE	100	5% 5%	1/10W 1/10W	
R018 R019	1-216-025-00 1-216-067-00		100 5.6K	5% 5%	1/10W 1/10W	R126 R134	1-216-037-00	METAL GLAZE METAL GLAZE	3.3K 330	5%	1/10W	
NOIS	1-210-007-00	MITAD GHADE	J. 01.	3.0	1/10#	MIJI	1 210 037 00		550	5.0	27 2011	
R020	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	R163	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R021	1-216-270-00		1M	5%	1/8W	R174	1-216-057-00		2.2K		1/10W	
R022	1-216-238-91		47K	5%	1/8W	R200	1-216-065-00		4.7K		1/10W	
R023 R025	1-216-057-00 1-216-091-00		2.2K 56K	5% 5%	1/10W 1/10W	R201 R202	1-249-389-11 1-216-097-00		4.7 100K	5% 5%	1/4W F 1/10W	
1025	1-210-091-00	MEIAD GDADE	JUK	3.0	1/104	Nava	1 210 057 00	MBIAL GLAZI	1001	3.0	1/1011	
R026	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	R203	1-216-065-00		4.7K	5%	1/10W	
R027		METAL GLAZE	10K	5%	1/10W	R204	1-216-065-00		4.7K		1/10W	
R028		METAL GLAZE	100	5%	1/10W	R205	1-216-295-00		0	5%	1/10W	
R029 R030	1-216-039-00		390	5% 5%	1/10W 2W F	R207 R209	1-249-389-11 1-216-057-00		4.7 2.2K	5%	1/4W F 1/10W	
VOOC	1-215-900-11	METAL OXIDE	22K	20	2m r	K203	1-210-037-00	METAL GUAZE	4.41	20	1/108	
R031	1-216-025-00	METAL GLAZE	100	5%	1/10W	R210	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R032	1-216-025-00		100	5%	1/10W	R211	1-216-073-00		10K	5%	1/10W	
R033	1-216-057-00		2.2K		1/10W	R213	1-216-174-00		100	5%	1/8W	
R036 R037	1-216-295-00		0	5% 5%	1/10W 1/10W	R214 R215	1-216-174-00 1-216-073-00		100 10K	5% 5%	1/8W 1/10W	
NO3/	1-216-093-00	METAL GLAZE	68K	J10	1/ 1/14	KZIS	T-7T0-0/3-00	EDIAL GUACE	TOV	20	1/ 1011	
R038	1-216-295-00			5%	1/10W	R225	1-216-037-00		330	5%	1/10W	
R040	1-216-089-00		47K	5%	1/10W	R226	1-216-081-00		22K	5%	1/10W	
R041	1-216-238-91		47K	5% F%	1/8W	R227	1-216-081-00		22K	5%	1/10W	
R044 R045	1-216-073-00 1-216-081-00		10K 22K	5% 5%	1/10W 1/10W	R236 R237	1-216-089-00	METAL GLAZE	47K 68K	5% 5%	1/10W 1/10W	
	7 210-001-00	MIND GRUDD	201/	3-0	T1 TAU	145	7 770 033-00	Junu	J 0 41	3.0	_,	
R046	1-216-254-00		220K		1/8W	R238	1-216-089-00		47K	5%	1/10W	
R047 R049		METAL GLAZE	12K	5%	1/10W	R239	1-216-093-00		68K	5%	1/10W 1/10W	
KU47	1-210-041-71	METAL GLAZE	470	5%	1/10W	R240	1-216-073-00	METAL GLAZE	10K	5%	T/ TOM	



The components identified by shading and marked \dot{r} , are critical for safety.

Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION	N		REMARK	REF.NO.	PART NO.	DESCRIPTIO	N		REMARK	
R301 R302	1-216-073-00 1-216-037-00	METAL GLAZE METAL GLAZE	10K 330	5% 5%	1/10W 1/10W	R408 R409	1-216-089-00 1-216-089-00	METAL GLAZE METAL GLAZE	47K 47K	5% 5%	1/10W 1/10W	
R303 R304 R305 R306 R307	1-216-090-00 1-216-025-00 1-216-025-00 1-216-113-71 1-216-121-71	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	51K 100 100 470K 1M	5% 5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	R410 R411 R412 R413 R414	1-216-171-00 1-216-091-00 1-216-041-71 1-216-113-71 1-202-539-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE SOLID	75 56K 470 470K 39	5% 5% 5% 5% 10%	1/8W 1/10W 1/10W 1/10W 1/2W	
R308 R309 R310 R311 R312	1-216-085-00 1-216-121-71 1-216-089-00 1-216-025-00 1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	33K 1M 47K 100 47K	5% 5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	R415 R416 R417 R418 R419	1-202-539-00 1-216-022-00 1-216-296-00 1-216-113-71 1-216-113-71	SOLID METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	39 75 0 470K 470K	10% 5% 5% 5% 5%	1/2W 1/10W 1/8W 1/10W 1/10W	
R313 R314 R315 R316 R317	1-216-045-00 1-216-045-00 1-216-045-00 1-216-033-71 1-216-033-71	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	680 680 680 220 220	5% 5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	R420 R421 R422 R423 R424	1-247-807-31 1-247-807-31 1-216-085-00 1-216-085-00 1-216-085-00	CARBON CARBON METAL GLAZE METAL GLAZE METAL GLAZE	100 100 33K 33K 33K	5% 5% 5% 5%	1/4W 1/4W 1/10W 1/10W 1/10W	
R318 R322 R323 R325 R327	1-216-019-00 1-216-022-00 1-216-089-00 1-216-089-00 1-216-097-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	56 75 47K 47K 100K	5% 5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	R425 R426 R427 R428 R429	1-216-049-00 1-216-049-00 1-216-049-00 1-216-081-00 1-216-053-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	1K 1K 1K 22K 1.5K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R328 R332 R333 R334 R335	1-216-077-00 1-216-093-00 1-216-037-00 1-216-033-71 1-216-295-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	15K 68K 330 220	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	R430 R501 R502 R503 R504	1-216-009-00 1-208-806-11 1-216-677-11 1-216-230-00 1-216-095-00	METAL GLAZE METAL CHIP METAL CHIP METAL GLAZE METAL GLAZE	22 10K 12K 22K 82K	5% 0.50% 0.50% 5%		
R336 R337 R339 R340 R341	1-216-295-00 1-216-295-00 1-216-061-00 1-216-270-00 1-216-069-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	0 0 3.3K 1M 6.8K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/8W 1/10W	R505 R506 R507 R508 R509	1-216-075-00 1-216-080-00 1-216-350-11 1-215-865-11 1-249-383-11	METAL GLAZE METAL GLAZE METAL OXIDE METAL OXIDE CARBON	12K 20K 1.2 220 1.5	5% 5% 5% 5%	1/10W 1/10W 1W F 1W F 1/4W F	
R342 R343 R344 R345 R351	1-216-189-00 1-216-295-00 1-216-295-00 1-216-089-00 1-216-133-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE METAL GLAZE	430 0 0 47K 3.3M	5% 5% 5% 5%	1/8W 1/10W 1/10W 1/10W 1/10W	R513 R514 R515 R602	1-249-417-11 1-216-089-00 1-216-079-00 1-216-079-01 1-249-417-11	CARBON METAL GLAZE METAL GLAZE VIRGOUND: CARBON	1K 47K 18K 3 1	5% 5% 5% 5%	1/4W 1/10W 1/10W 1/10W 1/4W	÷ 15 1
R352 R354 R355 R356 R357	1-216-113-71 1-216-025-00 1-216-121-71 1-216-119-00 1-216-093-00	METAL GLAZE METAL GLAZE	470K 100 1M 820K 68K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	R603 R604 R605 R607 R608	1-215-875-11 1-215-902-11 1-216-364-71 1-215-858-00 1-216-365-00	METAL OXIDE METAL OXIDE METAL OXIDE	10K 47K 0.39 15 0.47	5% 5% 5% 5% 5%	1W F 2W F 2W F 1W F 2W F	
R359 R360 R361 R362 R363	1-216-089-00 1-216-049-00 1-216-022-00 1-216-022-00 1-216-022-00	METAL GLAZE METAL GLAZE	47K 1K 75 75 75	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	R609 R610 R611 R613	1-249-420-11 1-249-415-11 1-216-354-11 1-249-115-111 1-249-417-11	CARBON METAL OXIDE CARBON	680 2.7	5% 5% 5% 5%	1/4W 1/4W 1W F 1/2W \$10\$	
R364 R365 R366 R367 R368	1-216-081-00 1-216-089-00 1-216-041-71 1-216-081-00 1-216-089-00	METAL GLAZE METAL GLAZE METAL GLAZE	22K 47K 470 22K 47K	5% 5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	R615 R616 R617 R618	1+116+265-11 1 1-216-073-00 1-215-479-00 1-215-877-11 1-247-863-91	METAL GLAZE METAL METAL OXIDE		5%	1012 - 2 118 1 1/10W 1/4W 1W F 1/4W	C.A.
R369 R401 R402 R403 R404	1-216-089-00 1-216-041-71 1-247-807-31 1-247-807-31 1-216-022-00	METAL GLAZE CARBON CARBON	47K 470 100 100 75	5% 5% 5% 5% 5%	1/10W 1/10W 1/4W 1/4W 1/10W	R619 R620 R621 R622 R623	1-249-424-11 1-247-895-91 1-216-057-00 1-249-437-11 1-216-065-00	METAL GLAZE CARBON	3.9K 470K 2.2K 47K 4.7K	5% 5% 5%	1/4W 1/4W 1/10W 1/4W 1/10W	
R405 R406 R407	1-216-113-71 1-216-091-00 1-216-089-00	METAL GLAZE	470K 56K 47K	5% 5% 5%	1/10W 1/10W 1/10W	R628	1-216-425-11 1-249-417-11 1-247-807-31	CARBON	1K	5%	1W F 1/4W F 1/4W	

The components identified by shading and marked in are critical for safety.

Replace only with the part number specified.



REF.NO.	PART NO.	DESCRIPTIO	N			REMARK	REF.NO.	PART NO.	DESCRIPT	TION		REMARK
R634 R635	1-249-397-11 1-249-437-11		22 47K	5% 5%	1/4W 1/4W	F			NSFORMER >			
R636 R637 R638 R640 R645	1-249-417-11 1-247-815-91 1-247-863-91 1-216-425-11 1-249-422-11	CARBON CARBON METAL OXIDE	1K 220 22K 56 2.7K	5% 5% 5% 5%	1/4W 1/4W 1/4W 1W 1/4W	F	T602	1-427-962-21 1-429-840-11 1-437-090-31 1-457-199-11 < THE	TRANSFORMER HDT	CONVERTER		
R646 R647 R648 R651 R800	1-249-377-11 1-202-933-61 1-249-407-11 1-215-902-11 1-215-887-00	FUSIBLE CARBON METAL OXIDE	0.47 0.1 150 47K 150	5% 10% 5% 5% 5%	1/4W 1/2W 1/4W 2W 2W	_	†##661 /±	<pre>1-609-327-11:</pre>	ER >			13 (11)1
R801 R802 R803 R804 R806	1-216-109-00 1-216-174-00 1-216-081-00 1-215-917-11 1-216-349-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL METAL OXIDE	330K 100 22K 1K 1	5% 5% 5% 5%	1/10W 1/8W 1/10W 3W 1W		X201 X301 X302	< CRY 1-760-628-11 1-760-907-21 1-760-710-21	VIBRATOR, C	RYSTAL (14.3	18MHz)	
R807 R808 R809 R810 R811	1-249-399-11 1-260-115-11 1-215-911-11 1-247-895-91 1-215-889-00	CARBON METAL OXIDE CARBON	33 22K 100 470K 330	5% 5% 5% 5%	1/4W 1/2W 3W 1/4W 2W	F F	******	**************************************		MPLETE	****	*****
R813 R814 R815 R816 R817	1-216-295-00 1-217-811-11 1-216-101-00 1-216-366-00 1-216-447-00	FUSIBLE METAL GLAZE	0 0.47 150K 0.56 27	5% 5% 5% 5%	1/10W 1/4W 1/10W 2W 2W		C701 C702 C703 C704 C705	<pre></pre>	CERAMIC CERAMIC CERAMIC	820PF 820PF 820PF 470PF 470PF	10% 10% 10% 5% 5%	50V 50V 50V 50V 50V
R818 R819 R820 R821 R822	1-260-115-11 1-249-441-11 1-217-820-11 1-216-295-00 1-216-107-00	CARBON FUSIBLE METAL GLAZE METAL GLAZE	22K 100K 3.3K 0 270K	5% 5% 5%	1/2W 1/4W 1/4W 1/10W 1/10W		C706 C707 C709 C710 C711	1-102-824-00 1-107-651-11 1-162-114-00 1-126-967-11 1-101-880-00	CERAMIC ELECT CERAMIC ELECT	470PF 4.7MF 0.0047MF 47MF 47PF	5% 20% 20% 5%	50V 250V 2KV 16V 50V
R823 R824 R825 R826 R828	1-249-413-11 1-216-125-00 1-216-105-71 1-216-296-00 1-216-115-00	METAL GLAZE METAL GLAZE METAL GLAZE	470 1.5M 220K 0 560K	5% 5%	1/4W 1/10W 1/10W 1/8W 1/10W	î	C712 C713	1-102-820-00 1-101-880-00 < CON		330PF 47PF	5% 5%	50V 50V
R1200 R1201 R1202 R1203 R1208	1-216-065-00	METAL GLAZE METAL GLAZE	2.2K 4.7K 22K 6.8K 4.7	5% 5%	1/8W 1/10V 1/10V 1/10V 1/4W	7	CNC71 CNC72 CNC73 CNC76	*1-568-881-51 *1-568-880-51 1-695-915-21 1-695-915-21	PIN, CONNECTAB (CONTAC	TOR 5P		
R1209 R1211 R1212	1-212-849-00 1-249-424-11 1-249-424-11	CARBON	4.7 3.9K 3.9K	5%	1/4W 1/4W 1/4W	F	D701 D702 D703	< DIC 8-719-991-33 8-719-991-33 8-719-991-33	DIODE 1SS13	3T-77		
ŔŸ600	< REI	LAY >	£84494	41811	1111	114811	D704 D705	8-719-991-33 8-719-991-33	DIODE 1SS13	3T-77		
S001 S002	< SW:	ITCH > SWITCH, TACT: SWITCH, TACT:	IL	**************************************	* 星套帶	**************************************	D706 D707 D708 D709 D716	8-719-991-33 8-719-991-33 8-719-991-33 8-719-991-33 8-719-991-33	DIODE 1SS13 DIODE 1SS13 DIODE 1SS13	3T-77 3T-77 3T-77		
\$003 \$004 \$005 \$006	1-571-532-21 1-571-532-21 1-571-532-21	SWITCH, TACT: SWITCH, TACT: SWITCH, TACT:	IL IL IL	wer i	****		D717 D718 D719 D723 D724	8-719-054-81 8-719-991-33 8-719-054-81 8-719-991-33 8-719-054-81	DIODE 1SS29 DIODE 1SS13 DIODE 1SS29 DIODE 1SS13	2T-77 3T-77 2T-77 3T-77		



RV702

REF.NO. PART NO. DESCRIPTION

The components identified by shading and marked $\hat{\mathcal{M}}$ are critical

for safety.

Replace only with the part number specified.

REF.NO.

REMARK

PART NO.

DESCRIPTION

REMARK

<	CRT	SOCKET	>
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	< IN	DUCTOR >				
702 1-4	08-425-00		220UH			
104 1-4	V0-423-UU	INDUCTOR	44UUB			
	< TR	ANSISTOR >				
	29-119-78	TRANSISTOR 2				
	29-119-78	TRANSISTOR 2				
	29-119-78 29-906-70	TRANSISTOR 2				
	29-906-70	TRANSISTOR I				
706 8-7	29-906-70	TRANSISTOR E	RF871-12	7		
	29-200-17	TRANSISTOR 2				
708 8-7	29-200-17	TRANSISTOR 2	SA1091-	0		
709 8-7	29-200-17	TRANSISTOR 2	SA1091-	0		
	< RES	ISTOR >				
	47-807-31	CARBON	100	5%	1/4W	
	49-417-11	CARBON	1K	5%	1/4W	
	49-417-11 49-399-11	CARBON CARBON	1K 33	5% 5%	1/4W	17
	49-401-11	CARBON	47	5%	1/4W	F
08 1-2	47-815-91	CARBON	220	5%	1/4W	
	47-815-91	CARBON	220	5%	1/4W	
:	47-815-91	CARBON	220	5%	1/4W	
	49-417-11	CARBON	1K	5%	1/4W	
1-2	49-417-11	CARBON	1K	5%	1/4W	
	49-417-11	CARBON	1K	5%	1/4W	
	49-417-11	CARBON	1K	5%	1/4W	
	60-105-11	CARBON	3.3K	5%	1/2W	
	60-105-11 60-105-11	CARBON CARBON	3.3K 3.3K	5% 5%	1/2W 1/2W	
20 1-2	15-923-51	METAL OXIDE	10K	5%	3W	F
	15-923-51	METAL OXIDE	10K	5%	3W	F
22 1-2	15-923-51	METAL OXIDE	10K	5%	3W	F
	02-814-91	SOLID	33K	10%	1/2W	
25 1-2	02-846-00	SOLID	470K	10%	1/2W	
	16-355-11	METAL OXIDE	3.3	5%	1W	F
	49-410-11	CARBON	270	5%	1/4W	
	47-815-91 49-410-11	CARBON CARBON	220 270	5% 5%	1/4W	
	47-815-91	CARBON	220	5%	1/4W 1/4W	
	47-815-91	CARBON	220	5%	1/4W	
	47-815-91 60-103-11	CARBON CARBON	220 2.2K	5% 5%	1/4W 1/2W	
	60-103-11	CARBON	2.2K	5%	1/2W	
	60-103-11	CARBON	2.2K	5%	1/2W	

1-241-656-21 RES, ADJ, METAL GLAZE 110M ****************

N	Ι	S	C	E	L	L	Α	Ŋ	E	0	U	S

1 1-406-829-11	COIL, DEGAUSSING
1-452-032-00 1-452-094-00 1-452-277-00	MAGNET, DISC; 10MM Ø MAGNET, ROTATABLE DISK; 15MM Ø
1-453-199-11	MAGNET, BMC TRANSPORMER ASSY, FLYBACK (NK-1741/U2A)
1-503-258-21	SPEAKER
# 1-511-433-11	minus, post (ac books)
1-693-338-11	TUNER (TUVIF) (AEP)
A 8-738-784-05 A 8-738-787-71 A 8-451-295-49	FICTURE CUBE (AD-169) (ASSESSED)
************	************

ACCESSORIES AND PACKING MATERIALS

*4-042-477-01 *4-203-444-01 *4-203-445-01 *4-203-447-01	BAG, PROTECTION CUSHION (LOWER) (ASSY) CUSHION (UPPER) (ASSY) INDIVIDUAL CARTON
4-203-574-41 4-203-574-11	MANUAL, INSTRUCTION (KV-21R1A)(ITALIAN) MANUAL, INSTRUCTION (KV-21R1D) (GERMAN/ENGLISH/DUTCH/ITALIAN/FRENCH/ GREEK/TURKISH)
4-203-574-71 4-203-574-81	MANUAL, INSTRUCTION (KV-21R1E)(SPANISH) MANUAL, INSTRUCTION (KV-21R1E) (PORTUGUESE)

REMOTE COMMANDER

1-473-194-11 COMMANDER, STANDARD TYPE (RM-836)

SERVICE MANUAL

BE-5 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER DE	EST.	CHASSIS NO.
KV-21R1A	RM-836	Italian	SCC-K31A-A				
KV-21R1D	RM-836	AEP	SCC-K32A-A				
KV-21R1E	RM-836	Spanish	SCC-K30A-A				

SUPPLEMENT - 1

SUBJECT: ADDITION OF M BOARD

File this supplement with the service manual

INTRODUCTION: New M Board has been added to the above models

SECTION 4 CIRCUIT ADJUSTMENTS

4-2 TEST MODE 2 (Page 21) See page 2

SECTION 5 DIAGRAMS

(A board, Page 33) See page 3 (M board, NEW) See page 9

SECTION 6 EXPLODED VIEWS

6-1. CHASSIS (Page 43) See page 11

• SECTION 7 ELECTRICAL PARTS LIST (Page 45) See page 12





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4-2. TEST MODE 2:

Is available by pressing the Test button twice, OSD "TT" appears. The functions described below are available by pressing two digits. To release Test Mode 2, press 0 twice, press 'TEST', press 'TV' or switch the TV into Standby Mode.

00	Switch'TT' mode off
01	Set picture level to maximum
02	Set picture level to minimum
03	Set volume to 35%
04	Set volume to 50%
05	Set volume to 65%
06	Set Volume to 80%
07	Aging condition (picture max. brightness max.)
08	Shipping Condition(prog 1. Zoom1(16"). Zoom2(21"&25"). Volume, loudspeaker & headphones 35%
09-10	No function
11	Sets zoom mode in 4:3 mode
12-14	No function
15	Read factory setting from ROM to NVM. Reads volume, Brightness, Picture, Hue, Sharpness and Colour values from ROM to the actual used values(last power memory)
16	Save actual used values as reset values.
17	Meshing enable/disable.
18	No function
19	RGB priority enable/disable
20-21	No function
22	Sub Colour (Pal / Secam different stores)
23	Sub Brightness
24	Destination B, system BG/L, L by default, RGB priority off
25	Destination E, system BG/DK, BG by default, RGB priority off
26	Destination U, system I only, RGB priority off
27	Destination L, system I/I, RGB priority off
28	Destination A, system BG only, RGB priority off
29	Destination K, system DK/BG, DK by default, RGB priority off
30	Destination D, system BG/DK, BG by default RGB priority off

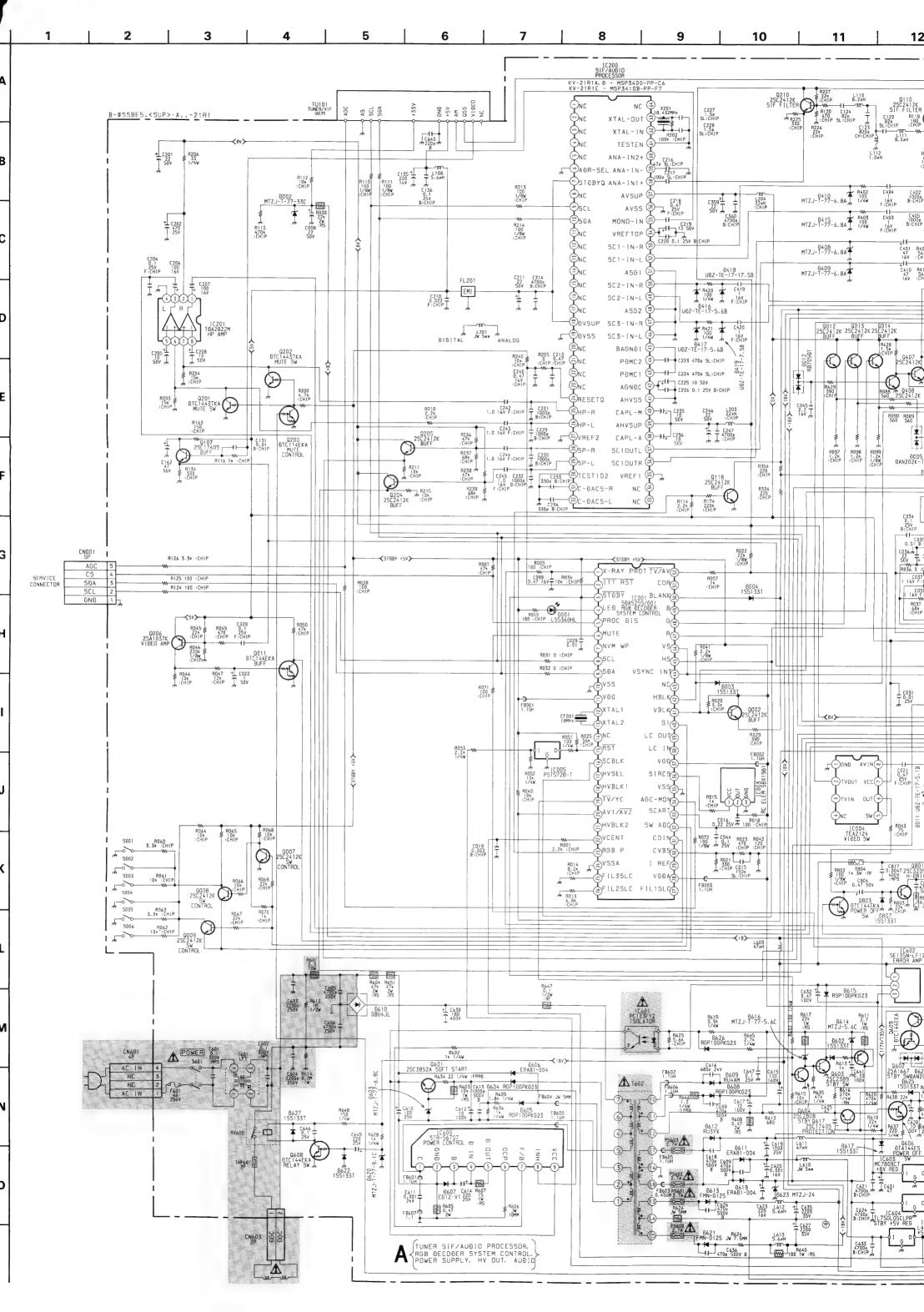
31	no function
32	Picture level to 50%
33-35	no function
36	Audio mute ON.
37	OSD off.
38	Enter G2 adjustment mode.
39	Sub-brightness
40	no function
41	Re-initialise NVM.
42	Dummy.
43	Re-initialise Geometry settings.
44-47	no function
48	Set NVM testbyte to 44h in NVM.
49	Erase NVM testbyte
50	Toggle 16:9 / 4:3 models
51	Toggle 60 / 100 programes
55	OSD horizontal adjustment, left side.
66	OSD horizontal adjustment, right side.
75	Text not interlaced and odd field
76	Text not interlaced and even field
77	Toggle text destination west or east
88	Sets V size to minimum and zoom1 (blankings adjustment for wide model)
99	Recovers V size and sets zoom3 (blankings adjustment for wide model)

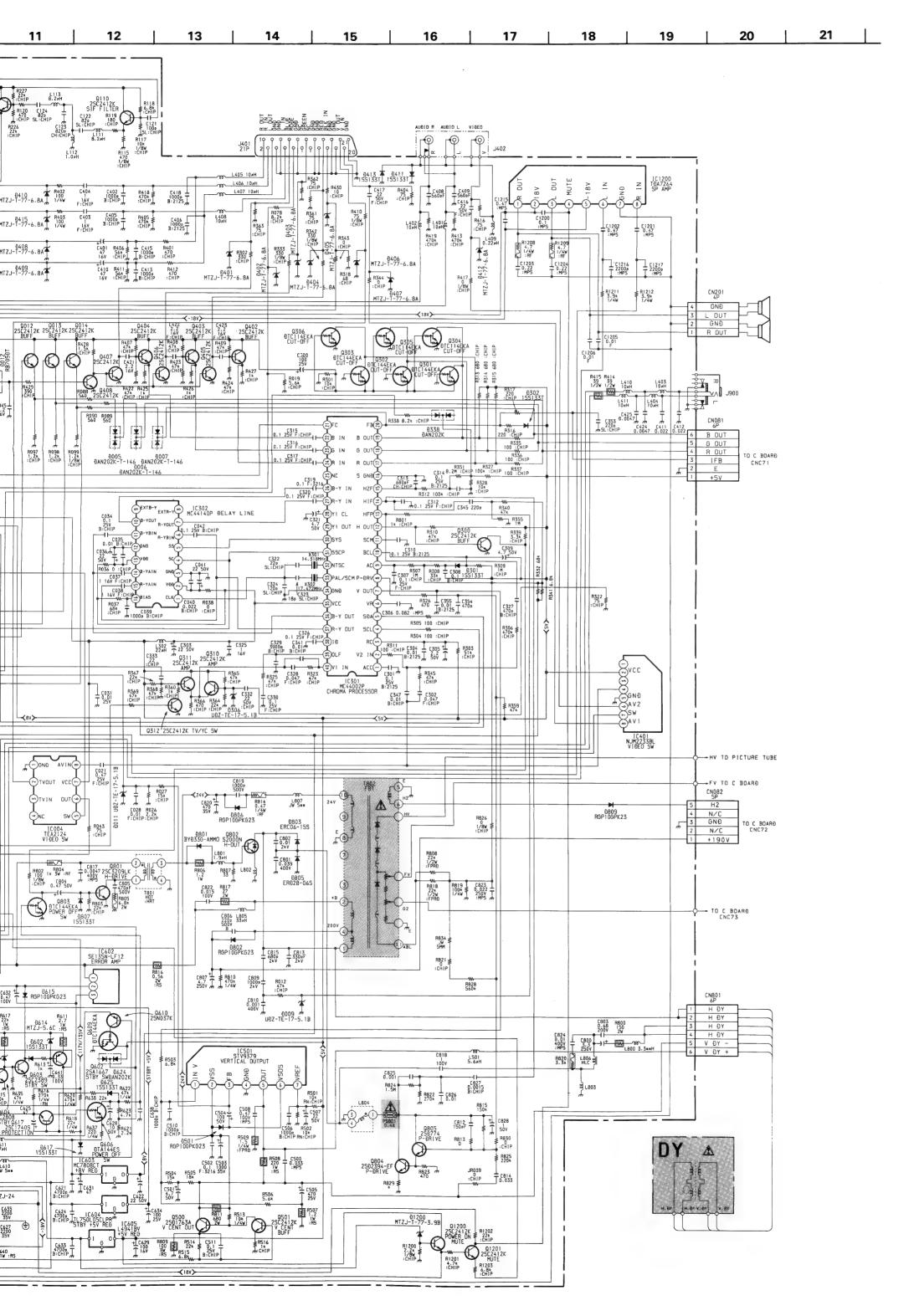
Note: For Test Modes 41-51, it is necessary to ensure that the TV is set to Prog 59.

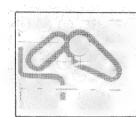
Note: TT modes are available from the following software versions onwards:

•	8-759-456-22 8-759-458-83	M27C512-90C1-BE5-7 M27C512-90C1-BE5-R2 (RUSSIA)
•	8-759-440-74 8-759-444-78	M27C512-90C1-BE5-1 M27C512-90C1-BE5-R1 (RUSSIA)

8-759-460-03 M27C512-90C1-BE5-10 M27C512-90C1-BE5-12 (RUSSIA)



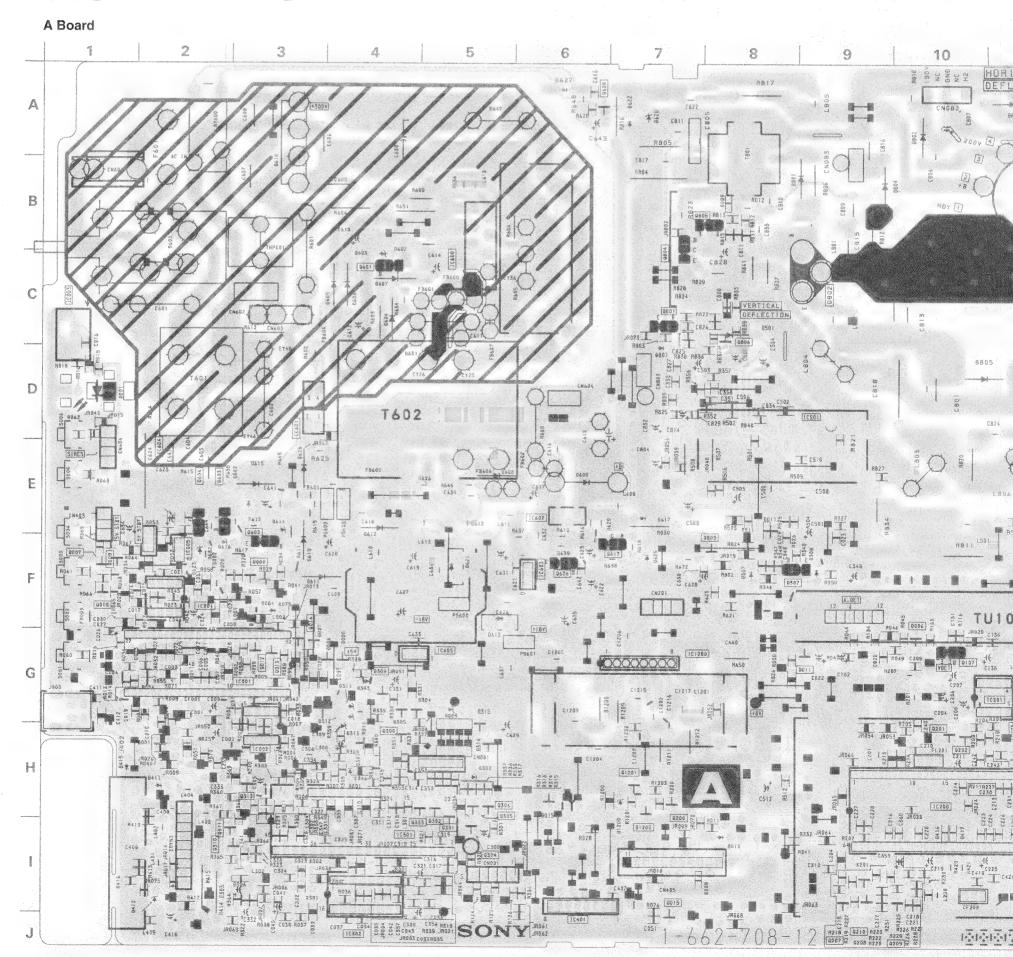




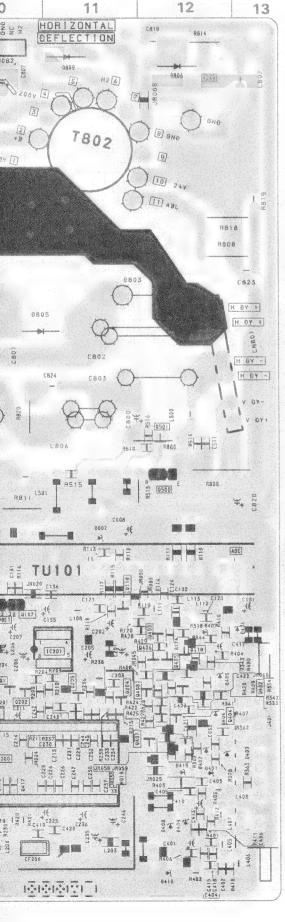
NOTE: The circuit indicated 600 Vp-p. Care must inspection or repairin

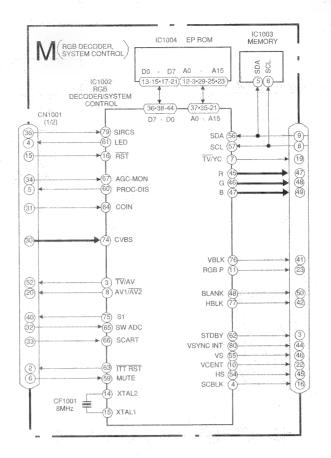


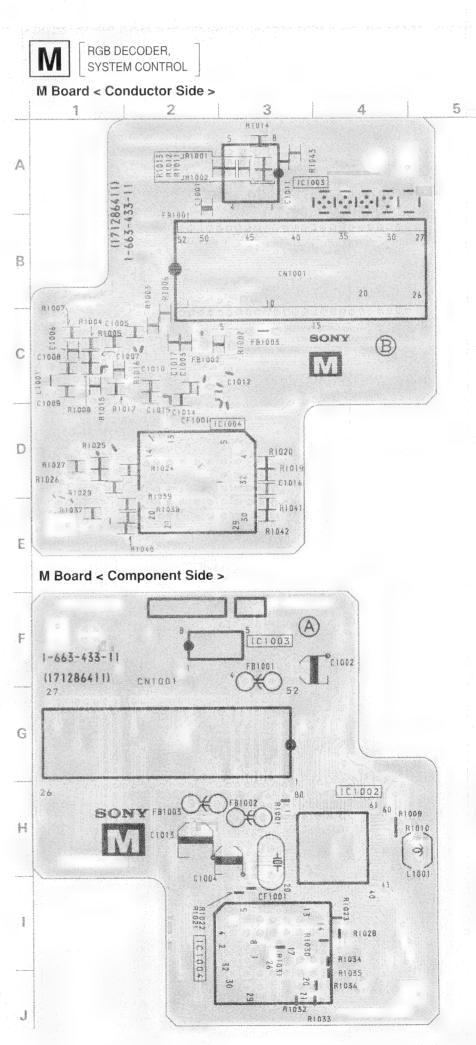
TUNER, SIF/AUDIO PROCESSOR, CRT DRIVER, POWER SUPPLY, HV OUT, AUDIO

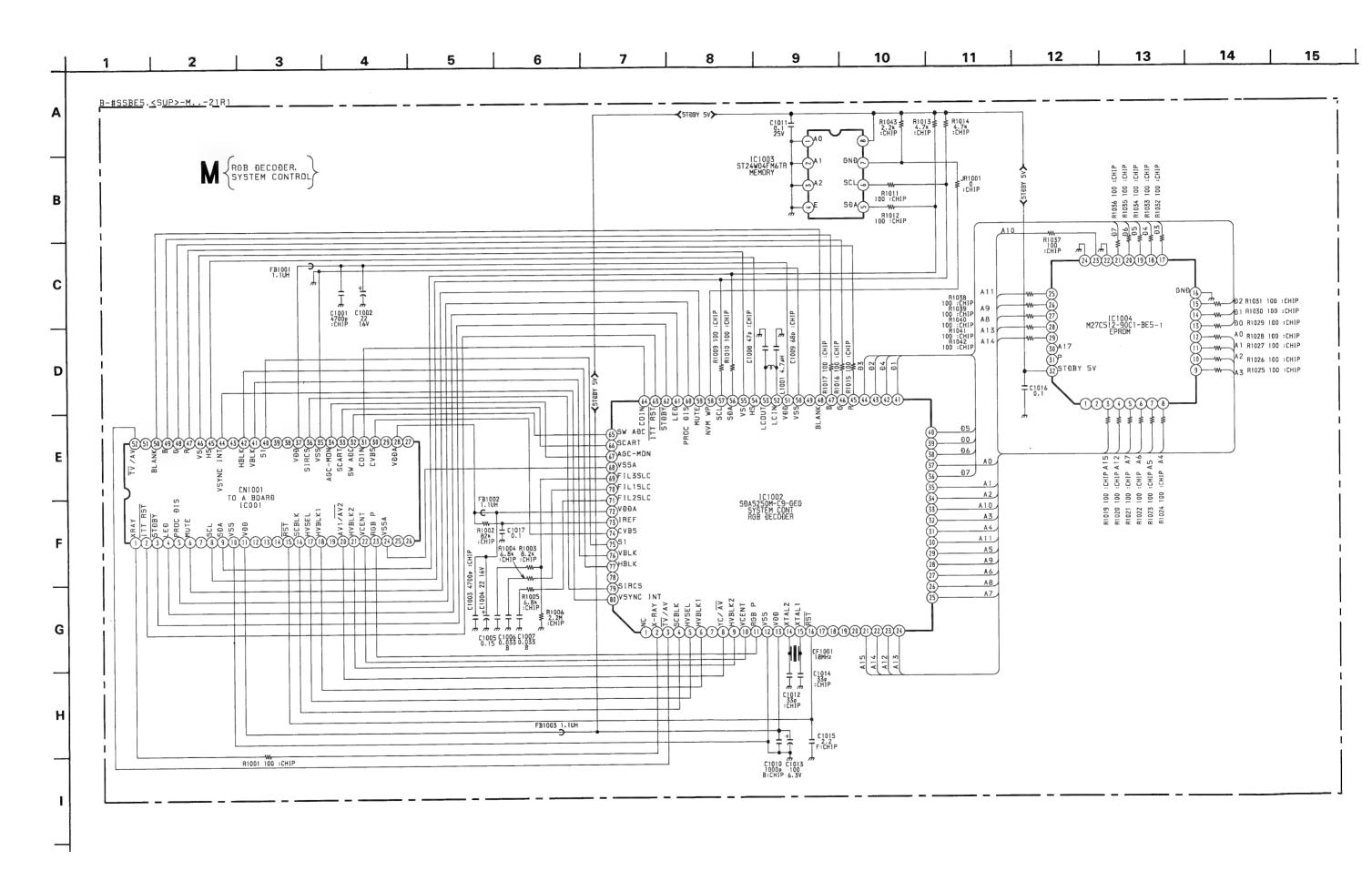


uit indicated as left contains high voltage of over b. Care must be paid to prevent an electric shock in on or repairing.









NOTE:

6-1. CHASSIS

EXPLODED VIEWS

- Items with no part number and no description are not stocked because they
 are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked . • are critical for safety.

Replace only with the part number specified.

Les composants identifies par une trame et une marque f sont critiques pour la securite.

Ne les remplacer que par une piece portant le numero specifie.

SECTION 7

ELECTRICAL PARTS LIST

When indicating parts by reference number, please include the board name.

 Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

 All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 RESISTORS

- All resistors are in ohms
- F: nonflammable

The components identified by shading and marked A are critical for safety.

Replace only with the part number specified.

Les composants identifies par une trame et une marque // sont critiques pour la securite.

Ne les remplacer que par une piece

portant le numero specifie.



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REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
31	A-1634-042-A	M BOARD, COMPLETE					
	,						

REF.NO. PART NO. DESCRIPTION REMARK REF.NO. PART NO. DESCRIPTION REMARK A BOARD 1-163-125-00 CERAMIC CHIP 220PF C345 5% 50V ***** C350 DELETED C354 1-163-005-11 CERAMIC CHIP 470PF 10% 50V < CAPACITOR > C358 DELETED C408 1-163-135-00 CERAMIC 560PF 5% 50V C002 DELETED C003 DELETED C409 1-163-135-00 CERAMIC 560PF 5% 50V C004 DELETED C416 1-126-965-11 ELECT 22MF 20% 50V C005 DELETED C417 1-126-965-11 ELECT 22MF 20% 50V C006 DELETED C421 1-164-337-11 CERAMIC CHIP 2.2MF 16V C422 1-164-337-11 CERAMIC CHIP 2.2MF 16V C007 DELETED C009 DELETED C423 1-164-337-11 CERAMIC CHIP 2.2MF 16V C011 DELETED C424 1-163-017-00 CERAMIC CHIP 0.0047MF 50V C012 DELETED C425 1-163-017-00 CERAMIC CHIP 0.0047MF 10% 50V C013 DELETED C611 1-136-538-11 FILM 0.001MF 3% 2KV C620 1-111-041-11 ELECT 20% 0.001MF 16V C014 1-164-346-11 CERAMIC CHIP 1MF 16V C017 1-162-638-11 CERAMIC CHIP 1MF 16V C623 1-111-034-11 ELECT 220MF 20% 16V C018 DELETED C629 1-124-455-00 ELECT 100MF 20% 16V C024 DELETED C631 1-124-910-11 ELECT 47MF 20% 50V C025 DELETED C632 1-130-785-11 MYLAR 0.47MF 10% 100V C641 1-130-783-00 MYLAR 0.33MF 10% 100V C026 DELETED C027 DELETED C645 1-104-666-11 ELECT 220MF 20% 25V C028 1-164-232-11 CERAMIC CHIP 0.01MF 10% 50V C646 1-163-038-00 CERAMIC CHIP 0.1MF 25V C029 1-163-077-00 CERAMIC CHIP 0.01MF 50V C647 1-163-038-00 CERAMIC CHIP 0.1MF 25V C031 1-163-038-00 CERAMIC CHIP 0.01MF 25V C805 1-102-228-00 CERAMIC 10% 500V C811 DELETED C044 1-164-004-11 CERAMIC CHIP 0.1MF 10% 25V C045 1-164-505-11 CERAMIC CHIP 2.2MF C812 16V 1-163-121-00 CERAMIC CHIP 150PF 50V C099 1-165-320-11 CERAMIC CHIP 0.47MF 10% 16V C813 1-162-115-00 CERAMIC 330PF 10% 2kv 1-163-139-00 CERAMIC CHIP 820PF C123 5% 50V 1-163-011-11 CERAMIC CHIP 0.0015MF 10% 50V C202 1-126-941-11 ELECT 470MF 20% 25V < CONNECTOR > C204 1-163-038-00 CERAMIC CHIP 0.1MF 25V C205 1-126-964-11 ELECT 20% 10MF 50V CN602 1 DRLETED C206 1-126-933-11 ELECT 100MF 20% 16V C207 1-126-933-11 ELECT 100MF 20% 16V < DIODE > C208 1-126-964-11 ELECT 10MF 20% 50V D009 8-719-976-99 DIODE DTZ5.1B C209 DELETED D011 8-719-976-99 DIODE DTZ5.1B C213 1-164-005-11 CERAMIC CHIP 0.47MF 25V D012 8-719-992-02 DIODE RB705D-T146 C300 1-126-942-61 ELECT 1000MF 20% 25V D306 8-719-976-99 DIODE DTZ5.1B C306 1-136-164-00 FILM 0.082MF 5% 50V D338 8-719-914-43 DIODE DAN202K C308 1-164-004-11 CERAMIC CHIP 0.1MF 10% 25V D411 8-719-991-33 DIODE 1SS133T-77 C313 1-163-137-00 CERAMIC CHIP 680PF 5% 50V D413 8-719-991-33 DIODE 1SS133T-77 1-163-038-00 CERAMIC CHIP 0.1MF C317 25V 8-719-056-84 DIODE UDZ-TE-17-7.5B D418 C318 DELETED D419 8-719-056-84 DIODE UDZ-TE-17-7.5B C325 1-164-346-11 CERAMIC CHIP 1MF 16V D623 8-719-924-16 DIODE MTZJ-T-77-24 C332 1-126-965-11 ELECT 20% 22MF 50V D624 8-719-914-43 DIODE DAN202K C333 1-107-715-11 ELECT 22MF 16V

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REF.NO.	PART NO.	DESCRIPTION	N		REMARK	REF.NO.	PART NO.	DESCRIPTIO	N		REMAR	K
IC002	< IC DELETED < COI					R207 R209 R312 R318 R326	DELETED DELETED 1-216-097-00 1-216-021-00 1-216-041-00		100K 68 470	5% 5% 5%	1/10W 1/10W 1/10W	
L001 L405 L406 L407 L408	DELETED 1-408-409-00 1-408-409-00 1-408-409-00 1-408-409-00	INDUCTOR INDUCTOR INDUCTOR INDUCTOR	10UH 10UH 10UH 10UH			R328 R335 R336 R337 R338	1-216-073-00 1-216-025-00 1-216-025-00 1-216-025-00 1-216-071-00	METAL GLAZE METAL GLAZE	10K 100 100 100 8.2K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/10W 1/10W	
L409 L410 L411 L501	1-410-985-11 1-408-409-00 1-408-409-00 1-412-522-41	INDUCTOR CHIP INDUCTOR INDUCTOR INDUCTOR	0.22U 10UH 10UH 5.6UF			R340 R342 R351 R352 R354	1-216-238-91 1-216-186-00 1-218-463-91 DELETED 1-216-033-00	METAL GLAZE METAL GLAZE	47K 330 8.2M	5% 5% 5%	1/8W 1/8W 1/10W	
	< TRA	ANSISTOR >										
Q609 Q610	8-729-027-59 8-729-216-22	TRANSISTOR DT TRANSISTOR 2S				R356 R357 R414 R415 R422	DELETED DELETED 1-260-311-11 1-260-311-11 1-216-691-11	CARBON	39 39 47K	5% 5% 0.5%	1/2W 1/2W 1/10W	
JR038 JR040 JR041 JR042	DELETED DELETED DELETED DELETED					R423 R424 R425 R426 R427	1-216-691-11 1-216-691-11 1-216-651-11 1-216-651-11 1-216-651-11	METAL CHIP METAL CHIP METAL CHIP	47K 47K 1K 1K 1K	0.5% 0.5% 0.5%	1/10W 1/10W 1/10W 1/10W 1/10W	
R001 R002 R003 R004 R006	1-216-057-00 DELETED DELETED DELETED DELETED	METAL GLAZE	2.2K	5%	1/10W	R428 R429 R430 R502 R503	1-216-053-00 1-216-188-00 1-216-001-00 1-208-806-11 1-216-218-00	METAL GLAZE METAL GLAZE METAL GLAZE METAL CHIP METAL GLAZE	1.5K 390 10 10K 6.8K	5% 5% 5%	1/10W 1/8W 1/10W 1/10W 1/8W	
R012 R015 R016 R017 R020	1-249-437-11 1-216-296-00 DELETED DELETED 1-216-061-00	METAL GLAZE	47K 1K	5% 0.5% 5%	1/4W 1/8W	R504 R505 R506 R513	1-216-077-00 1-216-079-00 1-216-669-11 1-249-429-11	METAL GLAZE METAL GLAZE METAL GLAZE CARBON	15K 18K 5.6K 10K	5% 5% 0.5% 5%	1/10W 1/10W 1/10W 1/4W	
R021 R022 R023 R027 R031	1-216-258-00 1-216-081-91 1-216-041-00 1-216-077-00 1-216-295-00		330K 22K 470 15K 0	5% 5% 5% 5%	1/8W 1/8W 1/10W 1/10W 1/10W	R514 R515 R516 R605 R625 R623	1-216-081-00 1-216-069-00 1-216-049-00 1-216-365-00 1-249-426-11 1-216-065-00	METAL GLAZE METAL OXIDE CARBON	22K 6.8K 1K 0.47 5.6K 4.7K		1/10W 1/10W 1/10W 2W F 1/4W 1/10W	
R032 R033 R034 R040 R041	1-216-295-00 DELETED 1-216-073-00 1-216-073-00 1-216-206-00	METAL GLAZE METAL GLAZE	0 10K 10K 2.2K	5% 5% 5% 5%	1/10W 1/10W 1/10W 1/8W	R627 R640 R646 R801	DELETED 1-216-025-00 1-249-382-11 1-216-049-00	CARBON METAL GLAZE	100 1.2 1K 6.8K	5% 5% 5%	1/10W 1/4W F 1/10W	
R042 R043 R054 R057 R071	1-216-027-00 1-216-022-00 DELETED 1-216-198-91 1-216-174-00	METAL GLAZE	120 75 1K 100	5% 5% 5% 5%	1/10W 1/10W 1/8W 1/8W	R805 R806 R811 R830	1-215-897-11 1-216-350-00 1-215-891-11 1-216-295-00	METAL OXIDE METAL OXIDE METAL GLAZE	1.2 680 0	5% 5% 5%	1W F 2W F 1/10W	
R072 R088 R089 R114 R120	1-216-174-00 1-216-043-91 1-216-043-91 1-216-057-00 1-216-041-00	METAL GLAZE METAL GLAZE METAL GLAZE	100 560 560 2.2K 470	5% 5% 5% 5% 5%	1/8W 1/10W 1/10W 1/10W 1/10W	******	******	*********	****	****	******	r#
R174 R200 R201 R203	1-216-033-00 1-216-065-00 DELETED 1-216-077-00	METAL GLAZE	220K 4.7K 15K	5% 5% 5%	1/10W 1/10W 1/10W							
R204	1-216-077-00		15K	5%	1/10W							
R206	1-249-399-11	CARBON	33	5%	1/4W							

REF.NO.

C1001

C1002

C1003 C1004

C1005 C1006

C1007

C1008

C1009 C1010

C1011

C1012 C1013

C1014

C1015

C1016

C1017

CF1001

FB1001

FB1002

FB1003

IC1002

IC1003 IC1004

L1001

JR1001

R1001

R1002

R1003

R1004

R1005

R1006

R1009

R1010

R1011

R1012

6.8K

2.2M

100

100

100

100

5%

5%

1/10W

1/10W

1/10W

1/10W

1/10W

1/10W

1-216-129-00 METAL GLAZE

1-216-025-00 METAL GLAZE

1-216-025-00 METAL GLAZE

1-216-025-00 METAL GLAZE

1-216-025-00 METAL GLAZE

METAL GLAZE

1-216-069-00

							N	N	C
PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	ON			REMARK
*A-1634-042-A	M BOARD, COMPLETE		R1013 R1014	1-216-065-00 1-216-065-00	METAL GLAZE	4.7K 4.7K	5%	1/10W 1/10W	
1-750-797-11	SOCKET, PLCC		R1015 R1016 R1017	1-216-025-00 1-216-025-00 1-216-025-00	METAL GLAZE	100 100 100	5% 5% 5%	1/10W 1/10W 1/10W	
< CAF	PACITOR >							.,	
4 460 04= 00		400 500	R1019	1-216-025-00		100	5%	1/10W	
1-163-017-00	CERAMIC CHIP 0.0047MF ELECT 22MF	10% 50V 20% 16V	R1020 R1021	1-216-025-00 1-216-025-00		100 100	5%	1/10W	
	CERAMIC CHIP 0.0047MF	10% 50V	R1021	1-216-025-00		100	5% 5%	1/10W 1/10W	
1-126-395-11		20% 16V	R1023	1-216-025-00		100	5%	1/10W	
1-164-492-11		10% 16V		1 810 010 00			30	-/	
			R1024	1-216-025-00		100	5%	1/10W	
	CERAMIC CHIP 0.033MF	10% 25V	R1025	1-216-025-00		100	5%	1/10W	
	CERAMIC CHIP 0.033MF	10% 25V	R1026	1-216-025-00		100		1/10W	
	CERAMIC CHIP 47PF	5% 50V	R1027	1-216-025-00		100	5%	1/10W	
	CERAMIC CHIP 68PF	5% 50V	R1028	1-216-025-00	METAL GLAZE	100	5%	1/10W	
1-103-009-11	CERAMIC CHIP 0.001MF	10% 50V	R1029	1-216-025-00	METAL GLAZE	100	5%	1/10W	
1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	R1029	1-216-025-00		100		1/10W	
	CERAMIC CHIP 33PF	5% 50V	R1031	1-216-025-00		100		1/10W	
1-126-206-11		20% 6.3V	R1032	1-216-025-00		100		1/10W	
	CERAMIC CHIP 33PF	5% 50V	R1033	1-216-025-00		100		1/10W	
	CERAMIC CHIP 2.2MF	16V						-,,,	
			R1034	1-216-025-00		100		1/10W	
	CERAMIC CHIP 0.1MF	10% 25V	R1035	1-216-025-00		100		1/10W	
1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	R1036	1-216-025-00		100		1/10W	
< FII	TER >		R1037 R1038	1-216-025-00 1-216-025-00		100 100		1/10W 1/10W	
1-767-120-21	VIBRATOR, CERAMIC (8MHz)		R1039	1-216-025-00		100		1/10W	
< FEF	RRITE BEAD >		R1040 R1041	1-216-025-00 1-216-025-00	METAL GLAZE	100 100	5%	1/10W 1/10W	
1-410-397-21	FERRITE BEAD INDUCTOR 1.	1mu	R1042 R1043	1-216-025-00 1-216-057-00	METAL GLAZE	100 2.2K		1/10W 1/10W	
1-410-397-21	FERRITE BEAD INDUCTOR 1. FERRITE BEAD INDUCTOR 1.	1UH		**********					******
< IC	>				C BOARD				
8-759-432-32	IC SDA5250M-C9-GEG IC ST24W04FM6TR			< CAF	ACITOR >				
8-759-440-74	IC M27C512-90C1-BE5-1		AP 5.4	4 400 445 44	OPP 1147 7				
< COI	IL >		C701 C702 C703	1-102-115-00 1-102-115-00 1-102-115-00	CERAMIC	560PF	1	.0% .0%	50V 50V
1-408-405-00	INDUCTOR 4.7UH		C/03			560PF		.0%	50V
< RES	ISTOR >		2500		SISTOR >	4.00	0.00	4 /6	
1-216-295-00	METAL GLAZE 0 5%	1/10W	R700 R729	1-202-549-00 1-216-350-11		100 1.2		1/2W 1W	
1-216-025-00 1-216-095-00 1-216-071-00 1-216-069-00	METAL GLAZE 82K 5% METAL GLAZE 8.2K 5% METAL GLAZE 6.8K 5%	1/10W 1/10W 1/10W 1/10W	******	******	*******	*****	*****	*****	*****

Sony Corporation Sony UK Service Promotions Div.

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SERVICE MANUAL

BE-5 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-21R1A	RM-836	Italian	SCC-K31A-A				
KV-21R1D	RM-836	AEP	SCC-K32A-A				
KV-21R1E	RM-836	Spanish	SCC-K30A-A				

SUPPLEMENT - 2

SUBJECT: DELETION OF M BOARD

File this supplement with the service manual

INTRODUCTION: 1. This supplement refers to models where the M Board has been deleted, and the circuitry incorporated onto the A Board.

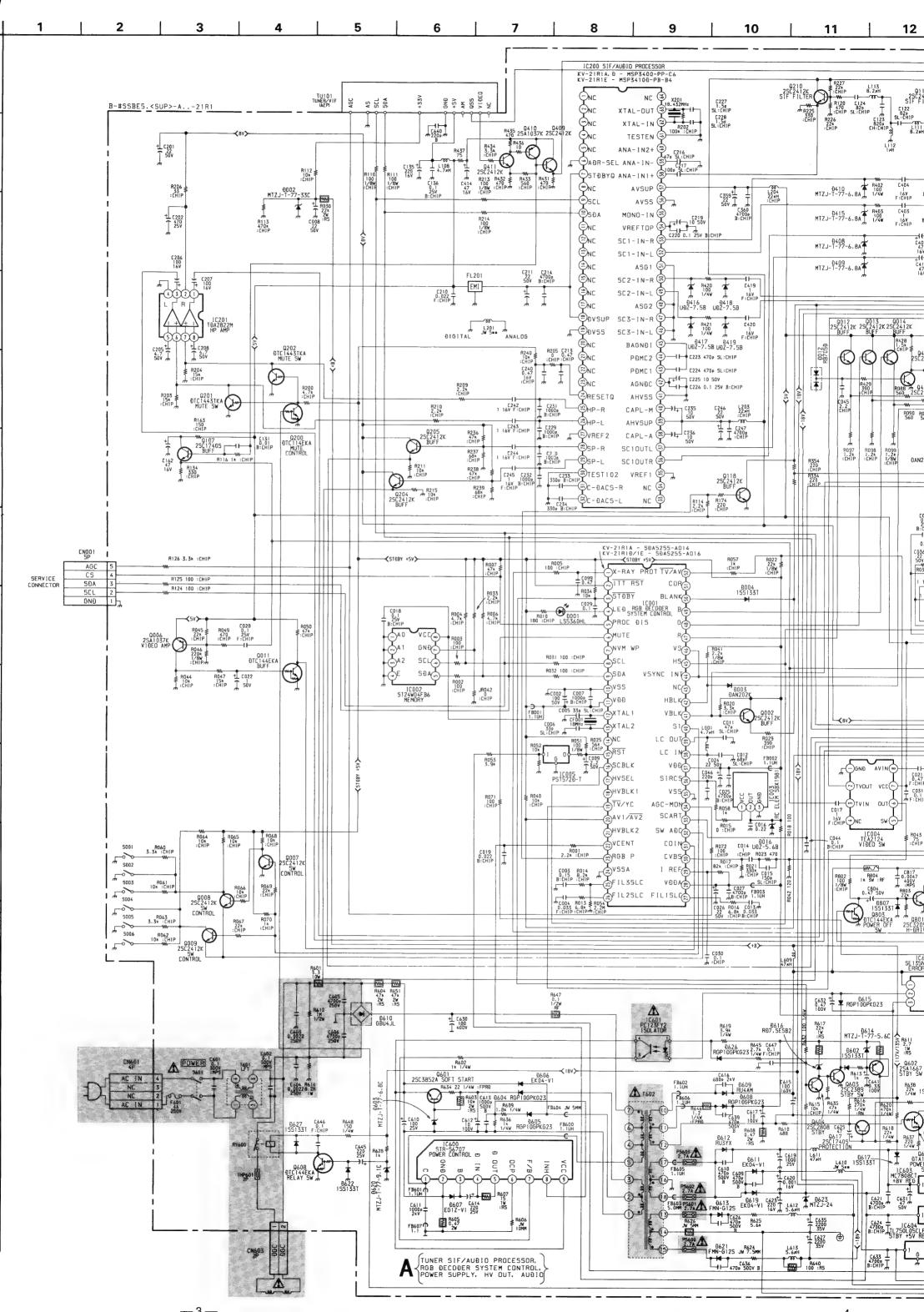
• SECTION 5 DIAGRAMS

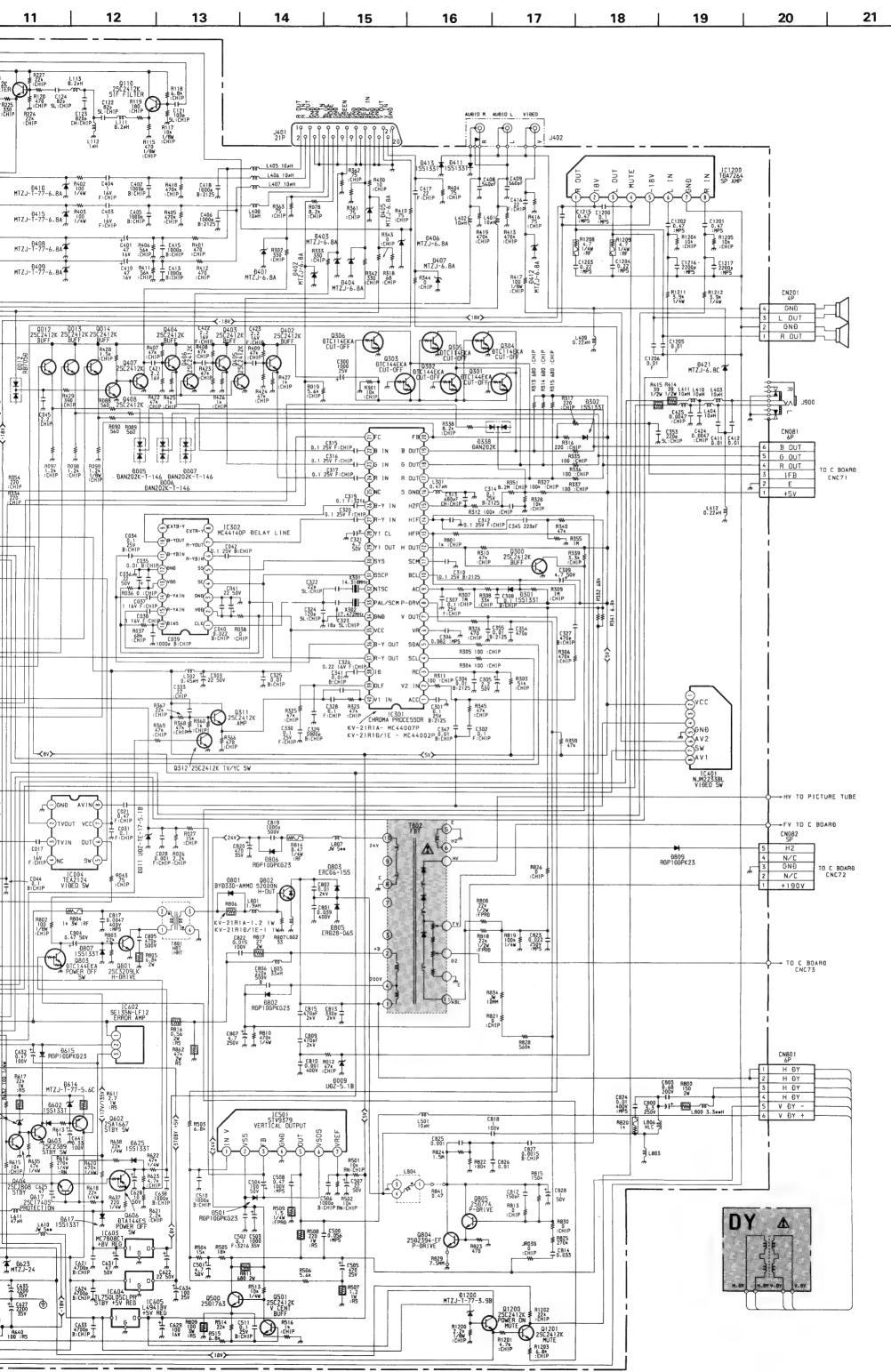
(A Board, Page 33) See page 3

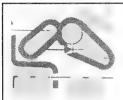
• SECTION 6 EXPLODED VIEWS
6-1. CHASSIS (Page 43) See page 8

• SECTION 7 ELECTRICAL PARTS LIST (Page 45) See page 9









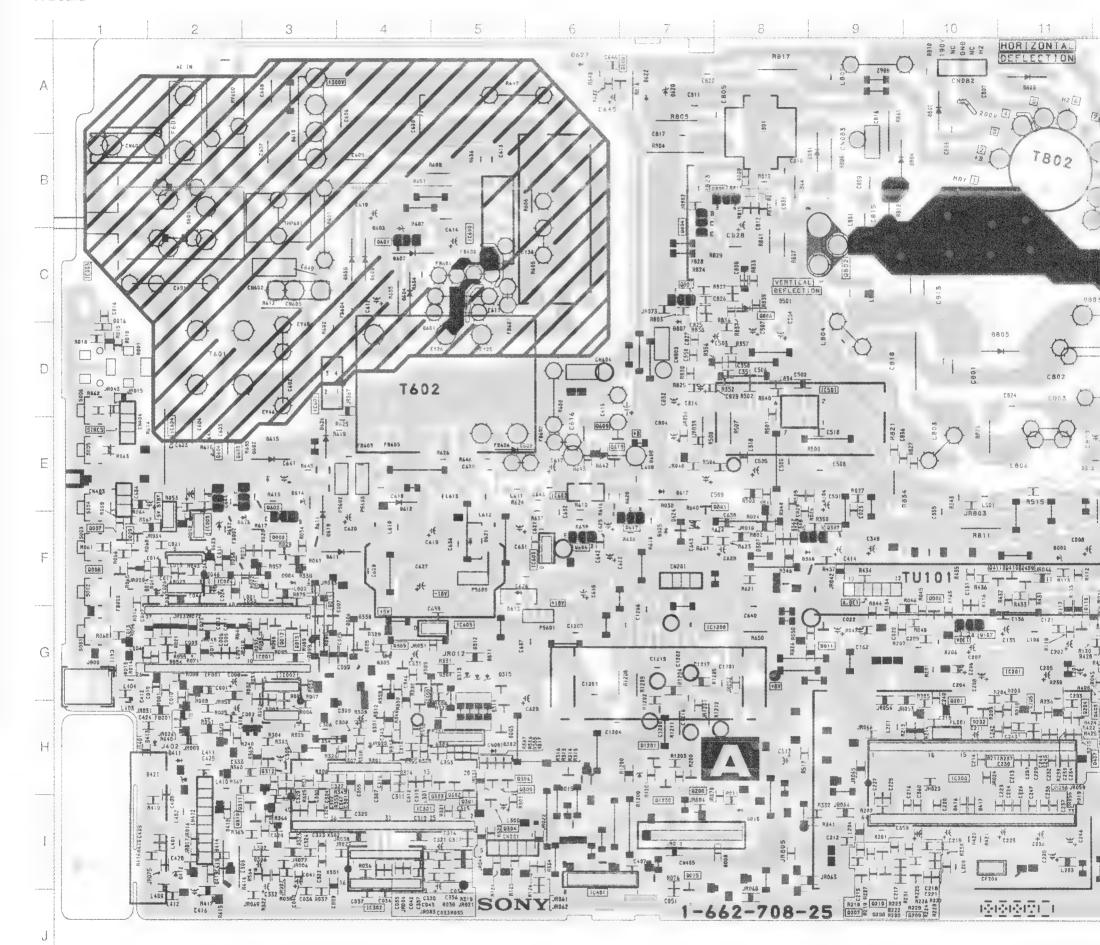
Note:

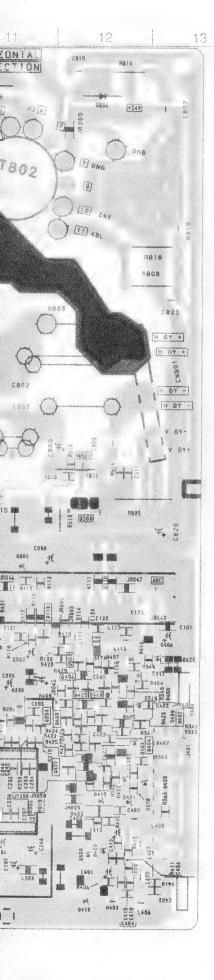
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



TUNER, SIF/AUDIO PROCESSOR CRT DRIVER POWER SUPPLY. HV OUT AUDIO

A Board





EXPLODED VIEWS

Items with no part number and no description are not stocked because they
are seldom required for routine service.

• The construction parts of an assembled part are indicated with a collation number in the remarks column.

 Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items. The components identified by shading and marked 1 are critical for safety.

Replace only with the part number specified.

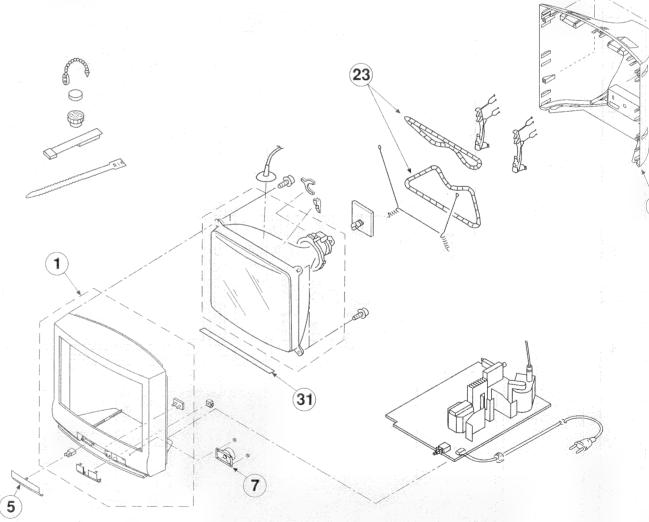
Les composants identifies par trame et une marque / \(\) s critiques pour la securite.

Ne les remplacer que par une pi

portant le numero specifie.

6-1. CHASSIS

NOTE:



REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	RE
1	X-4200-282-2	BEZNET ASSY	2-4				
5	4-203-435-41	DOOR (PRINTED) (KV-21)	R1A/21R1D)				
	4-203-435-31	DOOR (PRINTED) (KV-21)					
7	1-505-598-11	SPEAKER		- "			
23	1-411-922-11	COIL DEGAUSSING		-			
25	4-203-429-04	COVER (REAR)					
31	4-203-128-01	SHEET, BLOTTING					

EXPLODED VIEWS

NOTE:

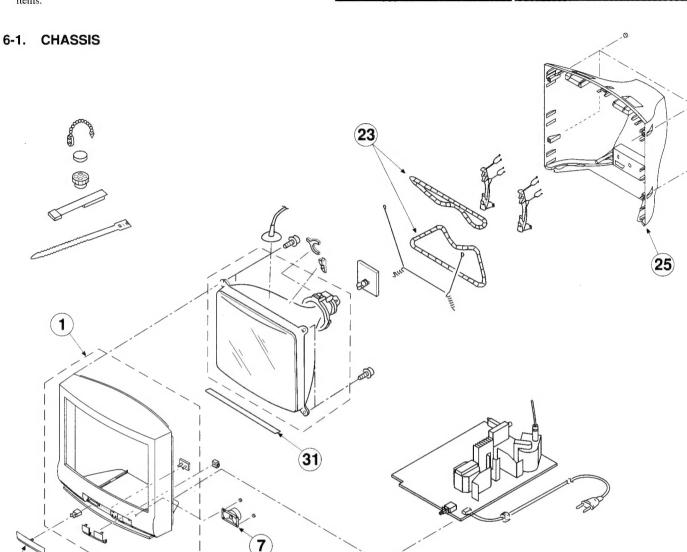
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked "* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked f are critical for safety.

Replace only with the part number specified.

Les composants identifies par une trame et une marque sont critiques pour la securite.

Ne les remplacer que par une piece portant le numero specifie.



REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
1 5 7 23 25 31	X-4200-282-2 4-203-435-41 4-203-435-31 1-505-598-11 1-411-922-11 4-203-429-04 4-203-128-01	BEZNET ASSY DOOR (PRINTED) (KV-21F DOOR (PRINTED) (KV-21F SPEAKER COIL DEGAUSSING COVER (REAR) SHEET, BLOTTING					

ELECTRICAL PARTS LIST

When indicating parts by reference number, please include the board name.

CAPACITORS

COILS

MF: mF, PF: mmF

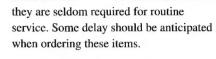
 $MMH: mH, \mu H: mH$

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F: nonflammable



The components identified by shading and marked 🏦 are critical for safety. Replace only with the part number specified.



REF.NO.	PART NO.	DESCRIPTIO	<u>N</u>		REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
		A BOARD, COM					< CON	NECTOR >	
	< CAP	ACITOR >				CN001	*1-564-508-11	PIN, CONNECTOR	5P
							< DIO	DE >	
C009 C012	1-124-961-11 1-163-113-00	ELECT CERAMIC CHIP	2.2MF	20% 5%	50V 50V	D003	9-710-014-43	DIODE DAN202K	
C012	1-126-960-11	ELECT	1MF	20%	50V	D003	8-719-158-15	DIODE RD5.6S-B	
C030	1-163-077-00	CERAMIC CHIP		200	50V	D408	8-719-110-14	DIODE RD9.1ES-1	33
C039	1-163-205-00	CERAMIC CHIP		10%	50V	D409	8-719-110-14	DIODE RD9.1ES-I	
						D410	8-719-110-14	DIODE RD9.1ES-I	33
C046	1-163-125-00	CERAMIC CHIP		5%	50V				_
C122	1-163-249-11	CERAMIC CHIP		5%	50V	D415	8-719-110-14	DIODE RD9.1ES-I	
C124	1-163-249-11	CERAMIC CHIP	82PF	5%	50V	D416	8-719-056-84	DIODE UDZ-TE-1	
C204 C205	DELETED 1-126-963-11	DI DOM	4.7MF	20%	50V	D417 D421	8-719-056-84 8-719-109-97	DIODE UDZ-TE-17 DIODE RD6.8ES-1	
C203	1-120-903-11	PUPCI	4./MF	200	304	D606	8-719-028-89	DIODE EK04-V1	32
C208	1-126-963-11	ELECT	4.7MF	20%	50V	2000	0 723 020 03	21022 21.01 12	
C218	DELETED					D611	8-719-028-89	DIODE EK04-V1	
C302	1-163-038-00	CERAMIC CHIP	0.1MF		25V	D616	8-719-110-03	DIODE RD7.5ESB2	2
C307	1-163-077-00	CERAMIC CHIP		10%	25V	D619	8-719-028-89	DIODE EK04-V1	
C310	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V	D623	8-719-924-16	DIODE MTZJ-T-7	7-24
G20 E	1 164 000 11	CERAMIC CHIP	0.01149	10%	50V	D802	8-719-302-43	DIODE EL1Z	
C325 C326	1-164-232-11 1-164-489-11	CERAMIC CHIP		10%	16V		< FUS	IR \	
C328	1-163-038-00	CERAMIC CHIP		10.0	25V		100		
C332	DELETED	Chiamic Chil	U. IMI		251	P601	1-532-350-00	FUSE (4A 250V)	
C345		CERAMIC CHIP	220PF	5%	50V	E-95-96 78 8 8 9 32	A M TO DESCRIPTION OF SHIPE OF		हा जो । हार का पहल पहल प्रदेश के हमार पान का
							< FER	RITE BEAD >	
C355		CERAMIC CHIP		10%	50V		4 444 448 44		
C411	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	FB003		INDUCTOR, FERR	
C412 C414		CERAMIC CHIP	U.UIMF 47MF	10% 20%	50V 16V	FB603 FB604	1-535-303-00 1-535-303-00	LEAD, JUMPER (! LEAD, JUMPER (!	
C500	1-126-967-11 1-137-465-11		0.056MF	5%	50V	F5004	7-222-202-00	DEAD, COMPER (.	5.0MM)
CJVV	1-137-403-11	Film	0.050M	3.0	301		< IC	>	
C601 A	1-136-212-12	PLIM	0.1MP	20%	300V				
C693 🖈	1-136-213-12 1-137-700-62	PELAL	0.1MF	20%	300V	IC001		IC SDA5255-A014	
C603 A	1-10-700-02	CERANIC	0.0022MF	99%	250V		8-759-472-99		5 (KV-21R1D/21R1E)
	1-117-700-61		0.0022MP	39%	250Y	IC002	8-759-437-34	IC ST24W04FB6	727777 GDV4004 F4
C695 A	1-100-599-12	GRANC	0.004782		. 259V	IC003	8-747-014-11		EMENT SBX1981-51
othe a	1-163-599-12	ree cutto	a natara		250V	IC200	8-759-493-49	IC MSP3410D-PB	-B4 (KV-ZIKIE)
C629	1-126-933-11		100MF	20%	16V	IC301	8-759-333-44	IC MC44007P(KV-	-21R1A)
C638	1-163-205-00			10%	50V	10001		IC MC44002P(KV-	
C804	1-126-959-11		0.47MF	20%	50V				·
C809	1-162-134-11	CERAMIC	470PF	10%	2KV		< SOC	KET >	
001E	1 1/0 13/ 11	CEDANTO	470n¤	1.09	יושני	J401	1_605_551_11	SOCKET PIN 21P	
C815 C825	1-162-134-11	CERAMIC CHIP	470PF	10% 10%	2KV 50V	0401	1-030-001-11	SOURET PIN 41P	
C826		CERAMIC CHIP		10%	50V		< COI	L >	
C828	1-126-960-11		1MF	20%	50V		, 502		
						L108	1-414-740-21		4.7UH
						L112	1-414-177-11	INDUCTOR	1UH



The components identified by shading and marked ‡ are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTIO	N		REMARK
L201 L301 L302 L412 L501	1-410-989-11 1-410-396-41	LEAD, JUMPER (5.0MM) INDUCTOR CHIP 0.47UH FERRITE BEAD INDUCTOR (INDUCTOR CHIP 0.22UH INDUCTOR 10UH).45UH	JR016 JR018 JR019 JR020 JR021	DELETED DELETED DELETED DELETED DELETED				
L610 L611 L807	1-535-303-00 1-414-743-21	LEAD, JUMPER (5.0MM)		JR022 JR023 JR024	DELETED DELETED DELETED				
	< IC	LINK >		JR025 JR026	DELETED DELETED				
PS801 A	Defened.	46464 44464 44464 44464 44664 46664		JR028 JR029	DELETED DELETED				
		ANSISTOR >		JR030 JR032	DELETED DELETED				
Q002 Q007 Q008	8-729-620-06	TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF		JR033 JR034	DELETED				
Q009 Q012	8-729-620-06 8-729-620-06	TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF		JR036 JR044 JR046	DELETED DELETED DELETED				
Q013 Q014	8-729-620-06	TRANSISTOR 2SC3052-EF		R005	1-216-174-00		100	5%	1/8W
Q110 Q118 Q204	8-729-620-06	TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF	the same of the control of the contr	R015 R017 R022 R028	1-216-296-00 1-216-095-00 1-216-081-00 DELETED	METAL GLAZE	0 82K 22K	5% 5% 5%	1/10W 1/10W 1/10W
Q205 Q210 Q300	8-729-620-06 8-729-620-06 8-729-620-06	TRANSISTOR 2SC3052-EF		R047 R051	1-216-077-00 1-216-174-00		15K 100	5% 5%	1/10W 1/8W
Q310 Q311	DELETED	TRANSISTOR 2SC3052-EF		R052 R053	1-216-073-00 1-216-063-91	METAL GLAZE METAL GLAZE	10K 3.9K	5% 5%	1/10W 1/10W
Q312 Q402		TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF		R058 R064	1-216-198-91		1K	5%	1/8W
Q403 Q404		TRANSISTOR 2SC3052-EF		R113 R174	1-216-222-00 1-216-113-00 1-216-033-00	METAL GLAZE	10K 470K 220	5% 5% 5%	1/8W 1/10W 1/10W
Q405		TRANSISTOR 2SC3052-EF		R306 R307	1-216-113-00 1-216-121-91		470K 1M	5% 5%	1/10W 1/10W
Q406 Q407	8-729-620-06	TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF		R309	1-216-121-91	METAL GLAZE	1M	5%	1/10W
Q408 Q409		TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF		R316 R317	1-216-033-00 1-216-033-00	METAL GLAZE METAL GLAZE	220 220	5% 5%	1/10W 1/10W
Q410	8-729-026-49	TRANSISTOR 2SA1037K-T14	16-R	R322 R334	DELETED 1-216-033-00	METAL GLAZE	220	5%	1/10W
Q411 Q501	8-729-620-06 8-729-620-06	TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF		R351	1-218-463-11	METAL GLAZE	8.2M	5%	1/10W
Q608 Q801	8-729-027-56	TRANSISTOR DTC143TKA-T1 TRANSISTOR 2SC3209LK	146	R355 R364	1-216-121-91 DELETED		1M	5%	1/10W
Q805		TRANSISTOR 2SD774-34		R365 R366	DELETED 1-216-041-00	METAL GLAZE	470	5%	1/10W
Q1200 Q1201	8-729-620-06 8-729-620-06	TRANSISTOR 2SC3052-EF TRANSISTOR 2SC3052-EF		R369	1-216-238-91		47K	5%	1/10W
2		SISTOR >		R405 R407	1-216-113-00 1-216-691-11	METAL GLAZE	470K 47K	5% 0.50%	1/10W
JR003	DELETED			R408 R409	1-216-691-11 1-216-691-11	METAL CHIP	47K 47K	0.50%	1/10W
JR004 JR005	DELETED DELETED			R410	1-216-022-00		75	5%	1/10W
JR006 JR007	DELETED DELETED			R412 R413	1-216-041-00 1-216-113-00	METAL GLAZE	470 470K	5% 5%	1/10W 1/10W
JR008	DELETED			R417 R418	1-216-174-00	METAL GLAZE	100	5% 5%	1/8W 1/10W
JR009 JR010	DELETED				1-216-113-00		470K		
JR011	DELETED DELETED			R419 R431	1-216-113-00 1-216-041-00	METAL GLAZE	470K 470	5% 5%	1/10W 1/10W
JR012	DELETED			R432 R433	1-216-041-00 1-216-043-91		470 560	5% 5%	1/10W 1/10W
JR013 JR014	DELETED DELETED			R434			3.3K	5%	1/10W
JR015	DELETED			R435	1-216-041-00	METAL GLAZE	470	5%	1/10W

The components identified by shading and marked \hat{x} are critical for safety.

Replace only with the part number specified.



REF.NO.	PART NO.	DESCRIPTION			REMARK	REF.NO.	PART NO.	DESC
R436	1-216-001-00	METAL GLAZE 10	5%	1/10W				
R437		METAL GLAZE 75	5%	1/10W				
R501	1-216-675-11			% 1/10W				
R502	1-216-675-11			\$ 1/10W				
R506	1-216-669-11		0.509					
R603	1-215-898-11	METAL OXIDE 10K	5%	2W	F			
R606		LEAD, JUMPER (10.		411	•			
R626	1-535-303-00		(Mr.)					
R628		METAL GLAZE 1K	5%	1/10W	P			
R806	1-216-350-00		5%	1W	F			
				1R1A)	•			
	1-216-349-00	METAL OXIDE 1	5%	1W	F			
		-		1R1D/2				
R820	1-215-869-11	METAL OXIDE 1K	5%	1W				
R822	1-216-103-00		5%	1/10W				
R825			5%	1/10W				
R829	1-535-143-71			1, 1011				
R834		LEAD, JUMPER (10.0						
R841	1-249-377-11	CARBON 0.47	5%	1/4W				
8862		METAL OXIDE 47K	5%	2W				
R1204		METAL GLAZE 10K	5%	1/8W				
R1205		METAL GLAZE 10K	5%	1/8W				
				_,				
******	*******	***********	*****	*****	******			
		C BOARD, COMPLETE						
	< CO1	NECTOR >						
CNC73	1-695-915-11	TAB (CONTACT)						
CNC76	1-695-915-11	TAB (CONTACT)						
	< CR	SOCKET >						
1761 A	1-526-990-21	SOCKET, CRT	HATE		!!!!! !			
	< IM	NDUCTOR >						
702	1-408-425-00	INDUCTOR 220UH						
1703		LEAD, JUMPER (5.0M						
704	1-535-303-00	LEAD, JUMPER (5.0M	M)					
	< RES	SISTOR >						
700	1-260-087-81	CARBON 100	5%	1/2W				
705		LEAD, JUMPER (10.0						
720	1-215-923-00	METAL OXIDE 10K	5%	3W	F			
721	1-215-923-00	METAL OXIDE 10K	5%	3W	F			
722	1-215-923-00	METAL OXIDE 10K	5%	3W	F			
723	1-535-143-11	LEAD, JUMPER (10.0	MM)					
724	1-260-117-11	CARBON 33K		1/2W				
725	1-260-131-11		10%					
*****	*******	*******	******	*****	*****			
		CELLANEOUS						
THE STREET SAN			5 t. E. T. B		9 (T) 32 (F *			
A. A.		COIL, DEGAUSSING	11717	1121				
	1-505-598-11	SPEAKER						
						i .		